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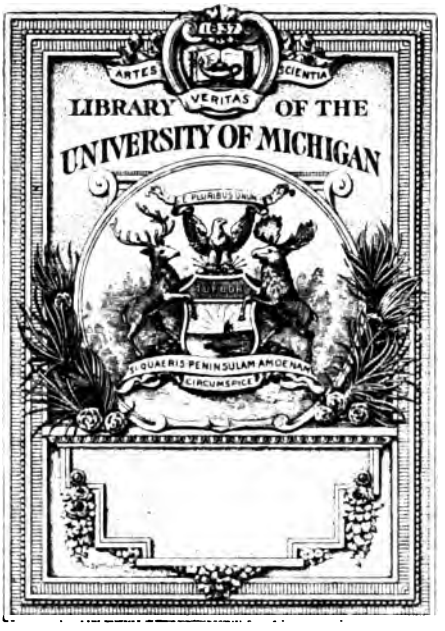
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TRANSACTIONS

OF THE

AMERICAN

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CONSTITUTION

OF THE

AMERICAN ETHNOLOGICAL SOCIETY:

ADOPTED DECEMBER 7, 1844.

ARTICLE I.

THIS Society shall be called the American Ethnological Society.

ARTICLE II.

The objects of this Society shall comprise inquiries into the origin, progress, and characteristics of the various races of man.

ARTICLE III.

This Society shall consist of Members, Corresponding Members, and Honorary Members; the first to be persons residing in the United States, and the two last to include both residents and persons in foreign countries. Both classes of members shall be elected by ballot, unless it be dispensed with by unanimous consent. In case of a ballot, a majority of the members present shall be requisite to constitute an election.

ARTICLE IV.

The officers of the Society shall consist of a President, two Vice-Presidents, a Corresponding Secretary, a Recording

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Secretary, a Treasurer, and a Librarian; who shall be annually elected by ballot, at the first meeting in each year.

ARTICLE V.

The members residing in the City of New-York and its vicinity shall constitute a Board of Managers, five of whom shall be a quorum for the transaction of business.

ARTICLE VI.

The times and places of meeting shall be determined by the Society or its presiding officer.

ARTICLE VII.

There shall be an annual payment of three dollars by each member residing in the city of New-York and its vicinity.

ARTICLE VIII.

This Constitution may be amended by a vote of three-fourths of the members present at any meeting; notice being given of such proposed amendments at the preceding meeting.

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PREFACE.

THE American Ethnological Society was established for the promotion of a most important and interesting branch of knowledge, that of Man and the Globe he inhabits, as comprised in the term Ethnology in its widest acceptation.

Its first meeting was held on the 19th November, 1842. During the winter months, since that time, it has had its regular meetings, at which papers connected with Ethnological science have been read, and discussions on similar subjects have occupied the attention of the Society.

The number of its members is unlimited, and for the furtherance of its objects, the Society desires to enrol in its list of members and correspondents gentlemen of kindred pursuits in all parts of the world.

The ground marked out for the operations of the Society, is unoccupied by any institution in the United States. But the establishment of similar societies in England and France, shows the general sense of the importance of ethnological investigations. These are felt to be of daily increasing moment in relation to the commercial and maritime interests of the nation, the missionary enterprise, the study of comparative philology, and many other objects of practical utility.

Many circumstances occur to render the present time propitious for the commencement of its labors. The artificial barriers that have hitherto divided nations and kept them from a knowledge of each other, are every where seen falling before the advance of commerce and its attendant, civilization. New and

extensive regions are thus opened to the enterprise of the traveller; and even in better known, but imperfectly described countries, the successful results of recent scientific explorations show how much yet remains to be done.

To its native and resident members, the American Ethnological Society feels it has but to indicate the field presented for their exertions, and the immense extent and variety of subjects that call for their investigation. The mystery that still envelopes the history and origin of the American races of man—the phenomena connected therewith—the diversity of languages—the remains of ancient art and traces of ancient civilization among the aborigines of Peru, Mexico, and Central America—the spontaneous growth or imported origin of arts, science, and mythology—the earth-works of the Ohio and Mississippi valleys and their founders:—these are amongst the topics for inquiry which the most cursory view suggests; and there are few individuals in our western country who may not obtain interesting materials for their elucidation.

PAPERS READ BEFORE THE AMERICAN ETHNOLOGICAL SOCIETY.

Notes on the Semi-Civilized Nations of Mexico, Yucatan, and Central America. By Albert Gallatin. *Published.*

On the Phallic Worship, its extent with the Old World and probable prevalence in America. By the Rev. Francis L. Hawks, D. D.

On the inscribed Stone known as the Dighton Rock, in the town of Assonet, Massachusetts, comprising a full analysis of the characters found on it, with their explanation furnished by an Indian of the Chippewa tribe. By Henry R. Schoolcraft.

On the Grave Creek Mound and Inscription. Communicated by the Rev. H. G. Comingo to Dr. Robinson.

On the Progress of Ethnology. By John R. Bartlett.

On the Ruins of a Temple discovered on the lower range of Mount Lebanon, near Beyroot, with remarks on the fragments of an inscription tending to show that it was dedicated to Jupiter, who was there worshipped under a Phœnician name. By Rev. Eli Smith. *Since printed in the Bibliotheca Sacra for* 1843, *No. III. p.* 557.

On the Grave Creek Mound in the Ohio valley and the inscribed tablet found therein. By Henry R. Schoolcraft. *Published.*

On the Ethnography, Languages, &c. of Northern Africa, the Sahara, and Soudan. By Wm. B. Hodgson. *Since printed by the author.*

A letter from J. Hamilton Couper, Esq., of Georgia, to Wm. B. Hodgson, giving an account of an aged Foulah slave now living in that State, together with his African reminiscences.

On some curious evidences of an era of ancient semi-civilization in the West, noticed in the progress of settlements in the Mississippi valley and the lakes. By Henry R. Schoolcraft.

An account of some ancient remains in Tennessee, with traces of Phallic worship among a people once occupying that section of country. By Gerard Troost, M. D. *Published.*

On the existing remains of the Punic or Carthaginian language. By George Folsom.

An account of a visit to the Lybio-Phœnician monument at Dugga, in the Pashalic of Tunis, Africa. By Frederic Catherwood. *Published.*

An account of the Serreculies, or Serrawallies, with hints respecting several other tribes or families of people composing the Foulah nation. By Theodore Dwight, Jr.

On the historical evidence adduced by the Welsh in favor of the discovery of America by Madoc ap Owen Gwinedd, in the XII century. By John R. Bartlett.

On the recent discoveries of Himyaritic Inscriptions, and the attempts made to decipher them. By Wm. W. Turner. *Published.*

On the aborigines of the island of Hayti or St. Domingo, identifying them with the Arrowacks of South America. By J. A. Van Heuvel.

Notice of the Uniapa Islands, a small group near New Guinea, and of the habits, language, &c. of that portion of the black race by which they are inhabited, from materials derived from a native. By Theodore Dwight, Jr.

Sketches of the Antiquities of the West. By N. Crookshank.

An Arabic letter from Abu Nasir of Nazareth, Syria, respecting schools established by him. Communicated by Dr. Robinson.

Account of an ancient structure at Bless, in the southern part of the regency of Tunis. By Frederick Catherwood. *Published.*

From the foregoing papers, the Society has selected for publication such as they think to possess a peculiar interest at the present time.

Besides the papers enumerated above, several elaborate dissertations on philological and antiquarian subjects are in the course of preparation by members, which the Society is desirous to place before the public.

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ARTICLE I.

NOTES ON

THE SEMI-CIVILIZED NATIONS

OF

MEXICO, YUCATAN, AND CENTRAL AMERICA.

BY ALBERT GALLATIN.

NOTES ON THE

SEMI-CIVILIZED NATIONS OF MEXICO.

When, at the end of the fifteenth century, America was discovered by the Europeans, by far the greater part of that vast continent was inhabited by a multitude of small savage tribes, speaking different languages, and in the rudest state of society. They derived their subsistence altogether or principally from the natural products of the earth, and had no other arts but those which were absolutely necessary for their existence.

Surrounded by that general darkness, some populous agricultural nations were found, with regular forms of government and of religious worship, occupying large cities, and which, though comparatively barbarous, had made no inconsiderable progress in arts and knowledge. The influence of these nations was, in some instances, felt beyond their actual boundaries; but their proper sites were exclusively between the tropics. In South America, that semi-civilization did not even extend to the low inter-tropical regions which lie east of the eastern declivities of the Andes, and was, strictly speaking, confined to Peru and to the elevated table land of New Grenada.

In North America, it extended from the Pacific to the Atlantic Ocean, embracing Mexico, Yucatan, and Central America, and might be traced along the shores of the Gulf of Mexico, from the northern tropic and the vicinity of the river

Panuco, as far as Cape Honduras and the Indians of the Mosquito shore. On the Pacific Ocean, the country north-west of the kingdom of Michoacan was inhabited by uncivilized tribes vaguely designated as Chichimecs and Otomis. But the civilization alluded to extended south-eastwardly, along the shores of that ocean, from about the twentieth degree of north latitude, as far at least as Nicaragua, if not Costa Rica.

SECTION I.

LANGUAGES.

THE object of an essay published nine years ago, in the second volume of the Transactions of the American Antiquarian Society, was a classification, according to their respective languages, of the Indian tribes east of the Rocky Mountains within the United States and the British possessions. Taking into view the words or vocabularies alone, although seventy-three tribes were found, speaking dialects so far differing, that they cannot be understood without an interpreter by the Indians of other tribes; yet the affinities between the words of many of them were such, as to show clearly that they belonged to the same stock. Sixty-one dialects, spoken by as many tribes, were thus found to constitute only eight languages, or rather families of languages, so dissimilar, that the few coincidences which might occur in their words appeared to be accidental. But it was on the other hand ascertained, that all the languages of which partial grammars could be obtained, however dissimilar in their words, were in their structure of the same character.

It was my intention to have performed a similar work with respect to the languages of Mexico and Central America.

With sufficient materials, it is not very difficult to ascertain real affinities between the words of the several languages, and to discover those which belong to the same stock. But, having had access to vocabularies of only the Mexican, the Otomi, the Huasteca, the Maya, and partially of two dialects of Guatimala, the additional information which has been obtained is, even in that respect, very limited.

We have the names of fifteen distinct languages now spoken in Mexico; but of these some belong to northern tribes which were uncivilized at the time of the Spanish conquest. It seems, indeed, that the country north of the ancient kingdom of Michoacan has been colonized by the Spaniards, who have expelled the native wild tribes, and transplanted in their place Indians generally of the Mexican race. I have not been able to ascertain the precise locality of two of the tribes, the Mixe (distinct from the Mixteca) and the Popoloque, though within the limits of the ancient Empire of Mexico. We have more correct notions of the relative geographical boundaries of the following nine nations.

The Atzec, or Mexican, was spoken in the valley of Mexico, and in the country immediately adjacent on the east and on the south. It extended northwardly as far as the small district of Meztitlan, about twenty-five leagues north of Mexico, which, according to the official statement of Gabriel de Chaves (1579), had never been conquered by the Mexicans, though the dialect of the inhabitants was a corrupt Mexican. In a south-eastern direction, the Atzec language extended to the shores of the Gulf of Mexico, as far as the river Guacacualco. The vicinity of this river was the birth-place of the celebrated Donna Marina; and we have the express testimony of Bernal Diaz, an eye-witness, who states that "she understood the language of Guacacualco and Mexico, *which is one and the same.*" How far that language extended due south, at the time of the conquest, is not precisely ascertained.

Baron de Humboldt informs us, that the Tlapanec is

spoken at Tlapa, which lies in about seventeen degrees of north latitude; and less than half a degree of longitude east of the city of Mexico. The Mixtec and the Zapoteque are the languages of Oaxaca. The Tarasca was that of the independent kingdom of Michoacan. The country along the Gulf of Mexico due east of that city, and including the site of Vera Cruz, was inhabited by people speaking the Totonaque language. North of these and along the gulf, lay the independent state of Huasteca, in which the language of that name was spoken. The Matlatzincan was spoken in the district of that name, sixty miles south-west of Mexico. Such of the Otomis as were civilized, appear to have been intermixed with the Mexicans, the Tlascalas, the Tarascas, and some other tribes.

As the Toltecs and Atzecs are said to have come into the valley of Mexico from the north, it would be interesting to know whether any trace of their language can be discovered amongst the native Indians in that quarter. No such discovery has as yet been made; and the words contained in the only grammar of any of those northern Indians which I have obtained, that of the Tarahumaras, have no resemblance with the Mexican.

A comparison of near three hundred words of the Mexican, Otomi, and Huasteca, exhibits but very few, and perhaps accidental, coincidences. The same observation applies to the Tarasca, so far as can be deduced from the examination of about forty words extracted from its grammar. The Otomi is more particularly a language differing from all others.

The Maya was the only language spoken in Yucatan; and we have a conclusive proof that it was also spoken in Tobasco. The only interpreters of Cortés were Jerome d'Aguilar and Donna Marina. D'Aguilar, who had been shipwrecked, and a prisoner in Yucatan eight years, knew no other Indian language than the Maya. He translated into that tongue what Cortés had to say; and Donna Marina, who understood no other language but her native Mexican and that

of Tobasco, where she had been a prisoner for several years, translated into Mexican the Maya words of D'Aguilar; which she could not have done, had not the languages of Yucatan and Tobasco been the same.

Three distinct Indian nations are mentioned by Gage within the limits of Chiapa and Tobasco: the Chiapas proper on the west; on the sea-shore the Zoques of Tobasco; behind these and east of the Chiapas, the Tzendales, who extended from Comitan to Palenque. A short vocabulary of this last place, brought by Mr. Stephens, evidently proves that this is a dialect of the Maya. The only proof of an affinity between this and the Chiapa proper, of which we have no vocabulary, is to be found in the similarity of the names of some of the days of the month, as given respectively by Perez and Boturini. These Chiapas proper are probably the Llanos of Juarros, as the first name of Ciudad Real was San Cristoval de los Llanos.

Juarros enumerates seven languages in Guatimala, the Quiche, Kachiguel, Subtugil, Mam, Pocoman or Poconchi, Sinca, and Chorti.

The Mam is the principal language of the province of Vera Paz, of which Coban is the metropolis.*

The Quiche is the dialect spoken in the ancient kingdom of that name, which was situated on the Pacific Ocean, adjacent to the provinces of Xoconosco and Oaxaca, the furthest conquests of the Mexicans in that quarter. This kingdom appears to have included the department of the state of Guatimala now called Quesaltenango, and portions of the adjacent districts. It was the most powerful of the several Indian states of Guatimala, and the only one which made a serious resistance when that country was invaded by the conqueror Alvarado.

* Not to be confounded with Copan, the ruins of which are in the state of Honduras, a few miles from the boundary line between that state and that of Guatimala, and near one hundred and fifty miles east of Coban.

The Kachiquel is probably spoken in the same vicinity, and is said by Gage to have some affinity with the Poconchi.

The Poconchi is the only Guatimala language of which we have a grammar. It is annexed to the travels of Gage, who was a curate amongst the Indians of that name, and whose parish included the precise spot where the new city of Guatimala, not then in existence, now stands.

The Sinca is spoken along the shores of the Pacific Ocean, south of New Guatimala, from Escuintla to the Rio des Esclavos.

The Chorti is spoken at Zacapa, on or near the great river Motagua, on the road that leads from the city of Guatimala to Golfe Dolce. It appears to be the general language of the department of Chiquimala, and extends easterly, as far at least as the site of the ancient Copan.

Mr. Stephens was informed that, besides the Mexican spoken by the Pipil Indians along the coast of the Pacific, there were twenty-four dialects in Guatimala; but that several of the idioms are so similar, that the Indians of distinct tribes can understand each other; and the curate of Sta. Cruz of Quiche, who had previously been curate of Coban, told him that, by one familiar with the Quiche the others were easily acquired.

A number of Poconchi words have been extracted from Gage's imperfect grammar: Mr. Stephens has brought a short vocabulary of the Chorti, taken by him at Zacapa; and he obtained from the curate of Quiche the Lord's Prayer in that language, and its numerals.

A comparison of the words belonging to these three languages shows their great affinity. Out of twenty-five words of the Poconchi, of which the equivalents in the Quiche have been obtained, eighteen are the same or similar; and out of seventeen words of the Chorti, eleven are common to either the Poconchi or Quiche. It further appears that out of forty-eight words in the Maya, not including the numerals, of which

we have the equivalents in the Poconchi or Quiche, twenty-seven are the same or similar. The numerals of the Quiche and of the Maya are moreover the same: and it may upon the whole be fairly inferred, that the Maya and the Guatimala languages belong to the same stock.

The Poconchi language was spoken as far as the borders of San Salvador. Beyond this, we have only some names, but no vocabulary of the Indian tribes of the other states of Central America. Colonel Galindo has given the names of six tribes in the state of Costarica: and he adds that the Indians of Guatimala have preserved their languages; but that in the other states of Central America they speak Spanish, and are blended with the other population. In the same essay published in the Transactions of the Royal Geographical Society of London, he has given the following Table of the population:

	Indians.	Ladinos, mixed.	White.	Total.
Costarica,	25,000		125,000	150,000
Nicaragua,	120,000	120,000	110,000	350,000
Honduras,		240,000	60,000	300,000
San Salvador,	70,000	210,000	70,000	350,000
Federal District,	20,000	20,000	10,000	50,000
Guatimala,	450,000	150,000	100,000	700,000
Total,	685,000	740,000	475,000	1,900,000

We are greatly indebted to the zeal and liberality of Mr. Ternaux-Compans, for the extensive collection of early original works and documents respecting America, most of them never before published. Amongst these, one of the most interesting is Oviedo's account of Nicaragua, which he visited in the year 1526.

He informs us that four or five totally different languages were spoken in that province; that the most extensively spoken, and which was called the language of Nicaragua, is the same as that of Mexico; and that two others were respectively called Chorotega and Chontal. The Chontales,

he adds, are very wild Indians who inhabit the mountainous country. Maize and cotton were cultivated and abundant; and the last plant was annual. The Cacao was also cultivated and was used as currency. The Indians had species of books made of deer skins, folded like those of the Mexicans, and covered with graphic and perhaps hieroglyphical paintings. Human sacrifices were common. The names of their gods differed from those of the Atzecs, with the exception of the Gods of Rain and of Air. On being asked the names of their feast days, they repeated, with a single omission, the Mexican names of the twenty days of the month. Their tradition was, that their ancestors had come a long time since (*un temps immémorial*) from the west; their country having been conquered by a hostile nation. It has been conjectured that this was Xoconosco or Oaxaca. The fact of a great colony in Nicaragua speaking the Mexican language is indubitable. It is equally certain that the modern Atzecs of Mexico, so far from having reached Nicaragua, had not even conquered Quiche, the most northern district of Guatimala. This was clearly a colony from that nation (Toltecs), speaking the same language as the Mexicans, who had in former times established a powerful monarchy in the country since conquered by the Atzecs, and whose memory was preserved in the Mexican traditions.

The authors of the Mithridates had pointed out a resemblance between the Maya and the Huasteca. In pursuing the inquiry, and on a comparison of about two hundred Huasteca words, of which we have the equivalents in the Maya, forty-seven (including the first twenty numerals) are found, which are either the same, or of which the affinity is indubitable, and about twenty more which have some resemblance. This, in languages so dissimilar in their words as those of America, would be sufficient to show that the Huasteca and Maya are kindred tongues. The more than ordinary similitude of their grammatical forms corroborates that opinion.

The annexed Table, in which the numerals are not included, embraces all the other Maya words of which we have equivalents in the dialects of Guatimala; and all the words, besides numerals, of the Huasteca and Maya which, out of the two hundred words compared, have any affinity or resemblance whatever.

	MEXICO (TAMPICO).	YUCATAN.	GUATIMALA.		
	Huasteca.	Maya.	Poconchi.	Quiche.	Chorti.
Man	inic	uinic	uinoc	uinac	mas
Woman	uxum	ixal	ixoc		eshoc
Father	paylom	yum	tat	ahan	pahle
Son		lakpal	akun		
Head	oc	pol	holum, ni (pl.)	ni (pl.)	cokholum
Mouth	huy	chi	chi		cahchi
Ear	xutzum	tsechekin			casiken
Arm	okob (pl.)	kab	kam		cahkamp
Foot	akan	oc, uoc	oc		cock
Animal	bichim	balche	chicop		
Bird	tzitzim	tchitch	tziken		tzeken
Egg		hê, heob (pl.)	moloh		
Fish		cay	cah		
Meat		baak	chak		chatih
Dog	pico	pec	tsi		
Maize	iziz	ixiim	ixim		hal
Bread		uah, pacah	uah	uah	semeet-ah, whue
Body		uinctil	chackil		wohed
Fire	cak	kaak	kaak		aak
Water	ija	hâ	aah	hah	ha
Earth		luum	uleu, ahkal	uleus	ahkal
Sun	akicha	kin	kih		ey-eh
Sky		kaan	taxah	chikah	
Day	akicha	kih	kih	chikih	
House	ata, kima	na, otok	ochok, pat		pati
Great		noh	nim		
Evil		lob	tsiri		
To-day		bejelae	runa	haute	
The will		olha, uhola	vah, a	huamla	
A name	bi	kaba	vi	bil	
Kingdom		ahaulil	ihauri	hauremla	
Sins		ziipil	mac, laval	mac	
Temptation	tahcah	tuntah	tacchihi	tachcula	
Give	pizal	ziil, tza	chaye	chyala	
Forgive		azaat	asaach	zachala	
To love	canezal	yecunah	nulocoh (I)		
To kill	tzemza	kimsah	kamsah		
I desire		tzibol	nusach (I)		
Let, permit	alcal	lukez	essa	col	
To write		tzib	tsiba		
No		ma	ma	ma	
Also		ix		xa	

	MEXICO (TAMPICO).	YUCATAN.	GUATIMALA.		
	Huasteca.	Maya.	Poconchi.	Quiche.	Chorti.
Over		okol	pan	pa	
In, from	tayl	ti	china	chibol	
May it (opt.)			ta	ta	
As		hebic	he	kehexi	
I	na, a, in	in, u	nu, u in		
Thou	ta, a, ana it	a, au	a, au ; na, nau at	a	
We		ca	ca, inca, k	ca	
Ye	xaxa	x, aex, auex	ata, auta, nau		
	HUASTECA.	MAYA.			
Stone	tujub	tunich			
Sister	ixam	idzim			
Thumb	ucubac	naacab			
Blood	xihtz	kik			
Bone	beclec	bac			
Skin	ot, otol	ot, otel			
Lizard	tzalich	xzeluah			
Spider	aam	am			
Ant	itzanitz	zinic			
Beans	pucul	buul, pacak			
Gold	mantakin	kantukin			
Honey	chabchan	cab			
Night	acal	acab			
Door	huyleb	hol			
White	zachi	zazac			
Black	ejek	e-ek			
To sleep	huayal	uenel			
To die	tzemel	kimil			
To weep	ukin	okol			
Thirst	chikel	chakbakal			
Infirmity	yauletz	kohauil			
Pain	yahbenib	yah			

The investigation of the languages of the Indians within the United States, east of the Rocky Mountains, and north of the States, as far as the Polar Sea, has satisfactorily shown that, however dissimilar in their words, their structure and grammatical forms were substantially the same. A general examination of the Mexican proper, and of the languages of Peru, of Chili, and of some other tribes of South America, has rendered it probable that, in that respect, all or nearly all the languages of America belong to the same family. This, if satisfactorily ascertained, would, connected with the similarity of the physical type, prove a general, though not per-

haps universal, common origin. But whatever the result might be, a more critical investigation than had heretofore been attempted, appeared necessary, in order to elicit and ascertain the truth.

With respect to the languages of Mexico and Central America, I have had access, and but lately, to the grammars of only six of them, which are: that of the Poconchi of Guatimala by Gage, of the Maya by Beltran, of the Huasteca by Tapia Zenteno; two of the Mexican, one by the same author, and the other by Paredes; one of the Tarasca by De Quixas; and one of the Otomi by L. De Neve y Molina.* The Mexican of Paredes is by far the most complete and satisfactory; that of the Maya by Beltran is in some respects copious; and Mr. Stephens obtained valuable additions respecting the Maya from Don J. P. Perez, Prefect of Peto in Yucatan. The other grammars are abridgments, and some of them very imperfect. My advanced age and the state of my health have not permitted me to study even these as thoroughly as was desirable. Referring for details to the appended grammatical notices, I submit with diffidence the results which I have obtained.

One of the most general features, and which has struck all those who have examined those languages, is the multitude of compounded words, many of them of inordinate length, and the facility with which new words of the same character might be formed. There is however an apparent difference in the manner in which words are compounded in the several Indian languages. In the various Algonkin dialects, compound words are found, consisting of the union of five or six words, so abbreviated that only one syllable of each has been preserved. Analogous instances occur in the Eskimo, and

* The two last were lent to me by the Philosophical Society of Philadelphia. I am indebted to the kindness of Mr. Pickering for those of the Mexican and Huatesca, and also for a notice of the language of certain tribes between the Rio Norte and San Antonio de Texas.

occasionally in some other languages. But this mode of compounding words by the union of single syllables borrowed from each of the primitives, is in no other language carried to the same extent as in the Algonkin.

Mr. Schoolcraft has however observed that, in the Chippewa, almost all the roots were of one or two syllables. This seems to render it probable that, in compounding their words, the Algonkin tribes select and preserve in composition those syllables which are respectively the roots of those words which united form the compound. A critical examination of the Mexican shows also that, when divested of its pronouns and other adjuncts, and also of the perpetually recurring similar terminations of its nouns, a considerable portion of the roots consists also of words of one or two syllables. If this should be confirmed, the difference between the modes of compounding words, respectively adopted by the Algonkins and the Mexicans, is more apparent than real.

Amongst the nations which are the subject of this inquiry, compound words are very numerous: but it is rare to find, independent of the agglutination of pronouns and insertion of particles, words consisting of the union of more than two primitives; one of which generally loses one of its syllables. It must however be observed, that the mode of compounding words is only adverted to incidentally, and not discussed as a distinct subject, in the ordinary grammars. Words of that description occur amongst other illustrations, and some may be extracted from dictionaries. But the principles on which words are compounded in any language, can be ascertained only by those who are thoroughly and practically acquainted with it. I must leave to other and abler hands the more thorough investigation of this most important feature of the American languages.

The languages now under consideration have, as those of our own Indians, distinct words expressive of the differences of sex in the human species; but that of irrational animals is

distinguished only by prefixing to their names another noun meaning "male" or "female." The distinction between inanimate things and animated beings, sometimes between rational and irrational beings, is found in all the languages. It does not indeed attach to every part of the speech and pervade the whole language. This is a special characteristic of the Algonkin, and does not prevail to the same extent in any other tongue. It is discovered only occasionally in some of the languages now under consideration.

The nouns are almost universally destitute of inflexions denoting cases. The vocative is only an interjection (*ah, e*) added to the word. The genitive is supplied by the possessive pronoun of the third person; the accusative or objective case generally by the personal pronoun of the third person. (him, it) annexed, not to the noun, but to the verb; sometimes by a particle inserted between the verb and the noun. In the Tarasca alone, and only to the names of rational beings, a particle is added to the noun, which has the character of an inflexion.

The plural is generally formed by prefixing a particle, or adding a termination to the singular; but there are many variations and exceptions.

It would seem, according to Gage's meagre Grammar, that there is not, in the Poconchi of Guatimala, any distinction between singular and plural. He gives indeed an illustration: *kino uinaç*, means equally a good man, and good men.

In the Maya and the Huasteca, no distinction is made in the formation of the plural, between animate and inanimate. The plural for all nouns is formed by adding to the singular, in the Maya the termination *ob*, and in the Huasteca *chic*. In the last language the particle *yam* may also be prefixed; and in the Maya some adjectives substitute in the plural the termination *lac* for the last syllables of the singular. When the adjectives and substantive are united, the termination *ob*

is added to the noun alone. Most nouns have also in the Maya a double termination: *il* or *el* is added to the singular whenever it is intended to designate the properties, quality, or use of a thing. And the numeral, "one;" in the Maya, *hun* converted into *hunppel;* in the Mexican, *cen;* become indefinite articles generally prefixed to nouns.

In the Tarasca the plural is formed, in animated beings, by adding to the singular the particle *echa;* and for inanimate things, by prefixing one of two particles, both of which mean, "much," or "many."

In the Mexican there is no inflexion designating the plural of inanimate things. It seems, however, that the particle *miec*, which means, "many" and "much," may be prefixed to nouns, whether of animated beings, or of inanimate things. But the general mode of forming the plural of animated beings consists in the addition or substitution of various suffixed particles, *me*, *tin*, *ke*, which are not used indiscriminately, but in conformity with rules, varying generally according to the termination of the singular. In some cases the plural is formed by a duplication of the first syllable.

In the Otomi, the difference between animated and inanimate is perceptible only in some verbs and some particles. Thus *otho* designates the absence of inanimate things, and *qhoo* that of animated beings. The nouns appear to be altogether inflexible. The plural is distinguished from the singular by an article prefixed, corresponding with the *hunppel* of the Maya, which is *na* in the singular and *ya* in the plural.

The comparative is generally formed by prefixing an adverb, meaning "more." This is used in the Maya specially in reference to animated beings, or rather to the proper names of persons. In other cases the comparative is formed by adding the termination *il* to the adjective, and prefixing the third person of the pronoun. In the Mexican and Tarasca the comparative is also formed by using a verb which means, "to surpass," "to exceed;" "John good, Peter surpasses

John." No mention is made of the comparative in the Grammar of the Poconchi.

There is no superlative proper in any of these languages; it is imperfectly supplied by a particle which means "very," "greatly," prefixed, in the Tarasca to the comparative, and in all the other languages to the primitive adjective.

Pronouns.

In all these languages pronouns are declined; all have an objective case which corresponds with our accusative and dative; and the plural is, in every instance, distinguished from the singular either by a termination added to this, or by the substitution of another word.

They are all divided into two classes.—First, absolute pronouns, which, though some of them may be used in conjugating verbs, may be used alone, unconnected either with nouns or verbs. These appear to be principally used in answering interrogations. Who has done this? the answer will be expressed by the absolute pronoun, which in that case corresponds with the French *moi*, *toi*, *lui*, in the nominative. Secondly, pronouns which never can be used alone, but only united with nouns, verbs, or particles having the character of prepositions. This last class is again subdivided into possessive pronouns united with nouns, and those which, united with verbs, are used in conjugations. There is a great similarity in each language respectively between the pronouns belonging to these two subdivisions, and they are the same in the Huasteca, the Maya, and the Poconchi. In the two last mentioned languages, distinct pronouns are used in both subdivisions, according as the noun or verb begins with a consonant or with a vowel.

In most languages, the plural termination of the pronoun is separated from the singular, and placed after the noun or verb. The body of the verb remains inflexible; the plural

termination is that of the pronoun, and by that alone is the plural of the verb distinguished from the singular. The same observation applies to the possessive pronoun, with this difference, that when the noun has a plural, both signs of the plural are added to the noun, that of the pronoun being placed last.

It follows that in the conjugation of verbs, the persons and number are distinguished only by the inflexions of the pronouns. And although the tenses, moods, and voices of the verbs are almost universally distinguished by a particle or particles added to the verb; yet the pronouns generally used in conjugating vary, and in many languages other and distinct pronouns are used, according to the several tenses, moods, and voices of the verb, as will appear by referring to the grammatical notices. In the Otomi, even the tenses and moods are distinguished only by the use of different pronouns, and not by any inflexion whatever of the verb. And in many of the languages, the pronoun may in certain cases receive the inflexion which designates the past or future.

With respect to the objective case of pronouns, it is never used but in the conjugation of verbs and united with the pronoun in the nominative case. In such sentences as I love thee, thou hast injured me, he sees us, &c., the pronouns, I thee, thou me, he us, are united; and, together with the body of the verb, form but one word.

Verbs.

It is obvious from what has been premised respecting pronouns, that their proper use, which is regulated by strict rules and very nice distinctions, constitutes the principal difficulty in the conjugation of verbs. With a slight exception, respecting the third person of the preterite in the Maya, it is a universal rule, that, in every tense respectively, the body of the verb is altogether inflexible, the differences between persons and number being, as already stated, designated by the

variations of the pronouns alone. The differences in the tenses, moods, and voices, are alone distinguished by inflexions of the verb itself, or by the addition of some particle. If we consider as distinct conjugations in each language respectively, only such as differ in this respect, it may be said that there is but one conjugation in the Mexican, the Tarasca, the Otomi, and perhaps the Poconchi, and that there are two or perhaps three in the Maya and the Huasteca. But if the nature of the verbs is analyzed, it will be found that, with the exception of the Otomi, a uniform and natural distinction affects equally the conjugations in all these languages. This great distinction is that of transitive and intransitive verbs. In the Mexican and Tarasca, it is indicated only by the various pronouns which are used; whilst in the Maya and the Huasteca it produces a difference not only in the pronouns, but also in what may be considered as inflexions of the verb.

Active verbs are by their nature transitive, and neuter are intransitive. In other words, in the active verbs, there is an object on which the action is exercised. In some cases, such as the verb "to give," there are two such objects, the thing given and the person to whom given. These distinctions carefully attended to are the basis on which the conjugations are founded, either in reference to the use of pronouns, or to the few inflexions of which the verb is susceptible. On that principle, active verbs are conjugated, as if they were intransitive, in two cases: first, when the object is already incorporated in the body of the verb, that is to say, when it is a verb compounded of a verb and a noun. Thus, in the Mexican, *cakchihua* is a verb of that description which means, "to make shoes;" there is no external object on which the action is exercised, that object is incorporated in the compound verb, and therefore it is conjugated as if it was an intransitive verb. Secondly, the active verb may be used in a general or abstract sense, without designating or expressing the object or objects of the action.

Thus the verb, "to forgive," may be used generally without expressing who or what is forgiven. In all such cases the active verb is also conjugated as if it was intransitive.

But when the object of the action is expressed, the objective case of the pronoun, me, thee, him, &c. must in some shape or another be incorporated in the word, generally by being united with the pronoun in the nominative case. For instance, *nimachtia* means, in Mexican, "I teach." *Ni* is the pronoun, "I," and *ti* the pronoun, "thou," in the nominative case. The objective cases of the three persons of the pronoun are respectively, *nech*, *mitz*, and *k* or *ki*. Uniting these with the pronouns in their nominative case, and observing that the pronoun of the third person, when agent, is omitted; the whole verb will become in one word: I teach thee, *nimitzmachtia*; thou teachest me, *tinechmachtia*; I teach him, *nikmachtia*; thou teachest them, *tikinmachtia*. It is principally in these last transitions, as they are called, that is to say, when the action is exercised on, or passes from the agent to any external object, that various nice distinctions are made in the Mexican language, which are stated in the grammatical notices. Viewed in its general aspect, it is still the same form which is used in all the Indian languages; I him teach Peter, &c. This compound conjugation (or transition) is very generally used for the purpose of converting the passive voice into an active form, using the expression, "they see me," (French, "On me voit,") instead of, "I am seen." But there is also a passive voice proper, designated by the insertion of a particle, which may be considered as an inflexion of the verb. Of the languages which have been examined, the Otomi alone has no passive voice, this being always expressed by an active form.

The several tenses and moods are likewise distinguished by the insertion or addition of particles, and by alterations in the pronouns. The principal simple tenses, from which all the others are derived, are the imperative and the present,

preterite perfect, and future of the indicative.* There are in most languages great varieties in the formation of the preterite, and some in the future and imperative. It is asserted in some instances, that there is no infinitive nor participles proper. The infinitive is rarely designated by a distinct inflexion; and it is often supplied by the present or some other tense of the indicative or subjunctive: I wish that I sleep, that I may sleep, instead of, "I wish *to sleep.*" The participles are generally expressed, the active by a relative, "he who loves," instead of "loving;" and the passive by a verbal noun, meaning "something or some person which is loved," or, "worthy to be loved."

Reference must be had for further details to the grammatical notices; but comparative Tables of the Pronouns and of the principal conjugations are annexed, in which the numerous varieties of the formation of the Preterite, are omitted.

The authors of the Grammars of the Mexican and Huasteca languages expressly state, that the substantive verb is found in neither of them. That which Beltran calls the substantive verb in the Maya, is nothing more than an emphatic union of the two pronouns *ten* and *en* in the first person, *tech* and *ech* in the second, &c. According to him, *ten* is the pronoun, and *en* the verb. But this *en* is expressly enumerated by him as one of the pronouns, viz. I, *en;* thou, *ech;* he, *lo;* Pl. *on, ex, ob.* And he further says that this pronoun is used as an objective case (persona que padece). In the example he gives, *ten* (*batab*) *en; tech* (*batab*) *ech;* he translates, I am a cacique, thou art a cacique, &c.; and so it means. But the literal translation is, I myself a cacique, thou thyself a cacique; and there is the same absence of the substantive verb, as in the other Indian languages.

* This tense, in the Spanish grammars of Indian languages, is uniformly called the imperfect future.

In the Poconchi the only instance given is in the first sentence of our Lord's Prayer. *Catat taxah vilcat*, which Gage translates, "Our Father heaven art;" and he says that this word *vilcat* is the second person of the verb *vilkin*, *vilcat*, &c., which he translates, I am, thou art, &c. But it is clear that, in this case, the verb means, to dwell; and there is in every Indian language a corresponding verb, meaning, to dwell, to stand, to be in a certain place; which, though we use it in that case, is not the substantive verb, and for which indeed the Spaniards have their verb *estar*.

The Otomi grammarian gives two forms of a substantive verb. The first which, as he says, means existence (*ser solamente*), seems to be an aggregation of pronouns, to which is prefixed, *Go* the root of the verb. But in another chapter, he says that *Go* is a particle occasionally united to the verb for greater ornament (or emphasis); *Go di madi*, instead of *di madi*, "I love." And he further says that this form is hardly used. The other form is used in reference to attributes; and he gives the full conjugation of *dna memti*, I am rich. By comparing this with the common conjugation of the verb, *di nee*, "I wish," it will be found, that the pronouns with which the adjective *memti* is connected or conjugated, are in all the tenses, (other than the present and imperfect,) precisely the same as those used in the conjugation of the verb *nee*. The pronouns in those two tenses are abbreviations *d* and *g*, of *di* and *gui*, with the addition of the particle *na*; meaning, "I the rich, thou the rich," &c.

We find also in the Tarasca grammar a substantive verb, the root of which is the single letter *e* prefixed to the signs of tenses and to the pronouns. It is certain that it is not used in the formation of the passive voice; and as no illustration or explanation whatever is given, it is impossible to ascertain, whether this verb implies the notion of existence, or whether it corresponds with the Spanish verb *estar*.

In all the languages of the Indians of North America,

including Mexico and Central America, which I have had an opportunity to examine, such verb is never used, either in the formation of the passive voice, or in connexion with attributes, or as indicating locality. We say, a man *is* seen, I *am* tall, good, &c., Peter *is* in Virginia. Neither of these locutions is expressed in the Indian languages by the substantive verb; the passive is converted into an active form, or expressed by an inflexion; the attribute by an emphatic pronoun; the locality by some verb meaning, to stand, to dwell. But, in Father D. G. Holquin's Grammar of the Peruvian language (*Qquichua*, or language of the Incas), the conjugation of the verb *cani* occupies a large space; and he says, that in Spanish it means both *ser* and *estar*; and that although it is not used in connexion with attributes or locality, the sentence, "there is a God," may be rendered by *canmi Dios*. In the language of Chili also, it appears that the word *gen*, which is said to be the substantive verb, is used in the formation of the passive.

Derivative and Compound Words.

To extract from grammars, and to compare the rules according to which pronouns are declined and verbs conjugated, is practicable, and a task which, with labor, may be performed with tolerable accuracy. But it is evident, that etymological researches, including the derivation and composition of words, cannot, in any language, be successfully pursued without a thorough knowledge of that language. Nor are such researches the immediate object of ordinary grammars, whether of our own or any other tongue. With the exception of those of the Mexican, the subject is treated only incidentally in those of the Indian languages by the Spanish missionaries. Yet it is in derivative and compound words, that the distinctive character of the Indian languages is most conspicuous. This character consists in that which has been called, the agglutination of words; in the perpetual tendency

of all the Indian languages, to concentrate in a single word all the ideas which have a natural connexion and present themselves together to the mind. To love, to give, to cause, to wish, or, want, used alone, are abstract words. To love somebody or some person or something, to give something to some person, to wish to do something, to cause another to do something, are ideas necessarily or naturally connected, and which, in the Indian languages, are expressed by a single word. On the other hand, specific names are given to every distinct object, and generic names are often wanted. Thus, for instance, instead of designating the different species of Oak, as we do, by distinctive adjectives, White Oak, Black Oak, Red Oak, &c., a distinct substantive name is given, in the Indian languages, to each species; and in many of them, the generic word *Oak*, embracing all the species, is wanting. It does not however follow, that abstract words are altogether wanting. Such as were actually necessary are found in these, as in all other languages. There is not, it is believed, a single one in which words are not found, expressive of qualities in the abstract, such as, whiteness, greatness, goodness, &c. These are generally derived from adjectives (or verbs); and they are formed, as our own words of the same description, by appropriate and uniform terminations.

The grammarians of the Mexican language have discussed and thrown much light on the subject of derivatives and compounds, because that language has been much more cultivated and is much better understood than any of the others spoken in the same or the adjacent regions. It was the most extensive, and that of the metropolis; regular professorships for teaching it were at an early date established at Mexico; and moreover, it was not altogether an oral language. With the exception of a mutilated manuscript, written by an Indian in the Maya, communicated by Mr. Perez to Mr. Stephens, and inserted in his Travels through Yucatan, there has not been discovered, to my knowledge, a single Indian manuscript writ-

ten with our characters, other than Mexican. Every where else, in that region as well as amongst our own Indians, the Missionaries had no other way of learning the language and deducing its rules, than by oral communications with the Indians. But, in Mexico, several native educated Indians did, almost immediately after the conquest, write works in their own language but with our characters. Those of Chilmalpain, Cristoval del Castillo, and others, though never published, are still existing and must have facilitated the knowedge of the Mexican.

Yet the occasional observations and illustrations, found in the Grammars of other languages, are sufficient to show that, in this respect as well as in that of grammar proper, the structure and general principles are the same. Of those which have been examined, the Otomi has the least affinity with the others.

Amongst the numerous particles which are united with other words, a distinction must be made, between those which modify or alter the meaning of the word, and those which, without changing it, are expressive of its relation to some other object. These relations are, in our own language, expressed by separate prepositions; in those of the Indians, almost universally by inseparable particles, united principally with nouns and pronouns, and which have the character of our prepositions, but which, though in some cases prefixed, are generally placed after the noun or pronoun. Such are the particles which mean, in, within, with, in company with, on, under, above, below, next, near, before, opposite, behind, &c. &c. This affords an additional proof of the tendency of the languages to agglutinate words together. In the Mexican, it is with the possessive pronouns, *no*, *mo*, *i*, *to*, *amo*, *in*, that they are united. *Pan*, means, above; *nopan*, above me; *mopan*, above thee; *ipan*, above him, &c. It also means, *in*; *apan*, in the water; the termination *tl* of *atl*, water, being lost in composition.

Other particles united with nouns have the character of adverbs and indicate locality, abundance, similarity, equality, &c. In the Mexican, *ca* indicates "instrument," in that sense which we express by *with;* but it must be united with the noun by the particle (ligatura) *ti:* he has hurt him with a stone, *tetica onicmotlac; te* is *tetl*, a stone, which loses its termination *tl* in composition. The particles which thus modify, designate, restrain, or alter the meaning of words are very numerous in all the Indian languages. Many of these have no apparent signification, and consist only of an altered or additional termination. Verbal nouns, viz. nouns derived from verbs, constitute the most numerous class of that description.

The second part, or fourth book of Paredes's Mexican Grammar, is almost exclusively devoted to the formation and signification of such nouns. It will be seen in the extracts, inserted in the grammatical notices, that the various terminations *ni*, *oni*, *li* and *tli*, *lizth*, *oca*, *otl* and *yotl*, *hua*, *e* and *o*, convert verbs into nouns; respectively corresponding with the Latin terminations *tor* and *bilis;* supplying the active and passive participles; expressing the act of doing that which the verb signifies; forming abstract substantives of qualities, and corresponding with the English termination *ness;* implying possession or dominion; designating locality, etc. The distinction between the terminations *lizth* and *oca*, both which express the act of doing that which the verb signifies, affords an illustration of the precision of the Indian languages. *Lizth* is active; *tetla çotlalizth* is, the love I have for another. *Oca* is passive: *notla çotlaloca* is, the love another has for me.

Instances of a similar use of particles, either as inseparable prepositions, for modifying or altering the meaning of words, or for the conversion of verbs into nouns, are found in all the other Indian languages.

In the Tarasca, the terminations *ti*, *ri*, *ta*, form nouns

which supply the active and passive participles: the particles *carah* and *gye* mean within; *chu*, below; *do* and *ro* designate locality, etc. Diminutives are formed by a duplication of the syllables and adding the termination *caxeti*.

In the Otomi, numerous verbal nouns are formed by prefixing to the verb letters which vary according to the first letter of the verb, and also according to the signification of the noun. Distinct derivatives are thus formed, signifying respectively the object and the subject of the verb: thus, from *op-ho*, to write, are derived *na ttop-ho*, a manuscript, and *na yop-ho*, the writer. The nouns which designate the subject of the action are also formed by adding the termination *te* or *bate;* from *pehpi*, to serve, *na pehpate*, the servant. And various particles united with nouns (or verbs) modify or alter their meaning, denoting respectively, greatness, darkness, harshness, liquidity, origin or locality, ownership, the matter of which something is made, or the purpose for which it is used. Diminutives are formed by prefixing the particle *ztzi* to the noun.

In the Huasteca, inseparable prepositions united with verbs are found, meaning, in, within, inside, by, with, from. Abstract nouns are formed by adding to the adjective the particle *tal*, *tab*, or *talab*: *tzehuantal*, poor; *tzehuantaltal*, poverty. Various adverbs are mentioned which designate the meaning of the noun (or verb) to which they are united. The particle *tam* prefixed indicates locality, and sometimes means, in. But Tapia Zenteno's Grammar is deficient in explanatory illustrations.

Beltran's Grammar of the Maya gives a long list of prepositions and adverbs, which does not sufficiently distinguish either inseparable prepositions, or those particles that are used in composition, and which is also deficient in illustrations. This enumeration however affords abundant proof that, in all those respects, the Maya is of the same character as the Mexican and the other Indian languages.

Even in Gage's imperfect sketch of the Poconchi, we find the preposition *chi*, against, united with the several persons of the pronoun, and the noun *ih*, which signifies, the back; and also that abstract nouns of qualities are formed from adjectives, by adding the terminations *hal* or *kil*, which are equivalent to the English termination *ness*.

Verbal nouns are formed in the same way from incorporated verbs, that is to say from those compounded of a verb and a noun, such as *cakchihua*, to make shoes. Thus from the Mexican incorporated verb *tlaxcalchihua* (*chihua*, to make), to make tortillas or bread, are derived, *tlaxcalchihuani*, the maker of tortillas; *tlaxcalchihualoni*, the instrument with which tortillas are made; and *tlaxcalchiuhcan*, the place where tortillas are made.

Several classes or compound forms of verbs are formed, either by an altered or additional termination of a noun or verb, or by being compounded with another verb. Both species of formation are found in the Mexican language: and new species of compounded verbs are thus formed meaning respectively, viz.:

I am going to do; I come from doing, or, have just been doing; both formed by the union of almost all verbs with either of the irregular verbs, *yauh*, to go, to set off, and *huallauh*, or *huitz*, to come. These two forms are called Gerundive conjugations.

I make another do; I make something for another; I do repeatedly, or, with intensity; I am in the habit of doing. These four forms, known respectively by the name of compulsive (causative), applicative, frequentative, and habitual, are formed by an altered or additional termination.

I believe that I am, or, do; I believe so without reason; I pretend, or, wish to be. These three forms are formed by the union of verbs respectively with the verbs *mati*, *toca*, *tlani*.

Other forms might be added: I make myself; I am, go,

come, doing something, formed by inserting the particle *ti* between the two verbs; I see with hatred; I feign, or, imagine to be, derived from the verbs *qualani*, I hate, and *nequi*, I feign, united with some other verb by the particle *ca*.

The compulsive, frequentative (repeatedly), reiterative or continuative (always), possessive forms, also those which express wish or desire, and several other are found in the Tarasca.

In the Huasteca are found the compulsive and frequentative forms, and also that derived from the verb *enel*, to go, corresponding with the Mexican Gerundive, I am going to do. This grammar being in many respects incomplete, it is probable that many other forms of the same character are omitted.

This observation applies with still greater force to Beltran's Maya Grammar, which, almost superfluously copious in the rules for conjugating, is extremely defective in other respects. Hardly any allusion is made to compound words. Yet the compulsive form is discovered in his list of verbs; and moreover, that in the fourth conjugation it is formed by the termination *cun*: to make another stay, *cahcun* (*cahal* is the neuter verb "stay"); *pachalcun*, to make another place something behind, etc. In the second conjugation, we find *hantzah*, to make another eat; *chenzah*, to make another yield; *kaabezah*, to make another exceed; *kaxzah*, to make it rain, etc. It may be inferred from Beltran's observations, that some of the irregular verbs are used in composition. Such are *tac*, which expresses the desire or want of doing something; and also *con*, *cox*, *xaic*, which mean, we go, and seem to be used in the form, "we are going to do something." In his long list of prepositions and adverbs, it is almost impossible to distinguish those which in the composition of verbs alter their meaning and produce new forms; and I could discern only the frequentative, the continuative, and the reciprocal forms. I have no doubt that, if thoroughly investigated, these various

forms of compound verbs will be found as abundant in the Maya as in the Mexican.

But similar compound forms cannot be distinguished, either in the Otomi Grammar of De Neve y Molina, or in his vocabulary. Judging by analogy and from the general character of the language, I am induced to suspect that such forms are generally expressed, neither by a compound verb, nor by an alteration in the termination, but by another distinct verb.

It will be seen in the grammatical notices, that there is, in the Mexican, a special form called Reverential, which pervades the whole language and is found in no other. High sounding titles, and certain special expressions of respect towards men in power, or superior classes, are found in every language; but this is believed to be the only one in which every word uttered by the inferior reminds him of his social position. And it seems to me, that this affords a sad proof of the miserable state of society which existed in Mexico, and of the complete degradation of the mass of the nation.

Besides those general forms of compound verbs and verbal nouns, there is in all these Indian languages a multitude of compound words, for the formation of which no general rules have been found, or are given. Various examples have been inserted in the grammatical notices, and many more might be added. Paredes observes that when two nouns are united together, one of them has an adjective sense; and that when two words are united, whatever their nature may be, the first word generally loses its last syllable. He further says, that generally compounds consist only of two words, rarely of three; and he adds that those which exceed that number are principally used in reference to sacred things. The missionaries have for that purpose formed new words, made according to the rules of the language, and intelligible to the Indians. Such is the word *tlacatzintiliztlatlacolli*, the original sin; formed from *tlacatl*, a person, *tzintiliztli*, commencement or principle, and *tlatlacolli*, sin; the commence-

ment or foundation of the sins of men. Such are also *in Cenchipahuacaichpotzintli*, the most pure Virgin; and *tochpochilhuicahuacanantzin*, our mother Virgin and Queen of Heaven. If I understand him rightly, the Father admits that, in their ancient times, the Indians had occasionally very long compound words. (Y en lo antiguo eran *demasiados* en sus poesias los Indios.)

As a general result, it appears to me indubitable that, however dissimilar in their words, the grammar proper and general structure of all these languages is, with the exception of the Otomi, founded on the same principles. And a comparison of the grammatical forms of the Maya, Poconchi, and Huasteca, corroborates the inference drawn from their vocabularies, that the languages of Guatimala, Yucatan, and the vicinity of Rio Panuco and Tampico, though distinct, form but one family. Considered in that view, and extending to all these the generic name of Maya, this and the Mexican are the two principal languages of the nations which are the subject of this inquiry. It seems probable that amongst the several other languages of that region, some will be found whose vocabularies will disclose affinities with the Mexican.

The general similarity in their grammatical forms and general structure, between the languages which we have now examined and those of the more northern Indians, appears to be also fully established. Almost all the great features are the same. The principal exception is the want, in the Mexican and kindred languages, of the dual or special plural so universal amongst our Indians, and which is also found in the languages of Peru and Chili. The only direct allusion to it occurs in the Maya. In those defective verbs which mean "we go," the words *con*, *cox*, and *xic*, are used as a dual and mean "*thou* and I go;" but, if addressing more than one person, the words *conex*, *coxex*, *xicex*, are used; they mean "*ye* and I go;" and Beltran calls them, plural plusquam dual expressions. In one of the Mexican grammars, the pronoun

nehuan is translated "we *both*" (ambos); and it is declined *tonehuan*, ye both, etc., which seems a species of dual. In the Algonkin languages, the distinction is in the first plural person of the pronoun. If when, in saying "we," the person spoken to is included, this is called the inclusive plural; but if that person is not included, another form is used, which is called the exclusive plural. In the first case the *k*, which is the characteristic of the second person, is always used. In the Mexican, *ti* is equally used, though with a different accent, for the second person singular and for the first person plural; and *an* is the second person plural of the pronoun. Judging by analogy, it might be inferred that the plural *ti* of the first person (we) means, "I and ye;" and that the plural *an*, of the second person, means "ye," not including the speaker. But this is only a conjecture, as Paredes does not say that such is the fact. Another observation may find its place here. In the Cherokee, a distinction, first pointed out by Mr. Pickering, is made in the pronoun of the third person, viz., whether that person is absent or present. In the Tarasca, the following distinctions are made in that third person: *ima*, *imax*, he or they, if they are far off; *thsimi*, if they are present; *thsima*, if they are very far; *hicha*, if they are seen.

In every other respect the general similarity of character is indubitable.

Even admitting that, in some of those languages, a verb meaning or implying existence may be found, it is at least certain that, neither in those of the northern Indians, nor of the nations which have been the subject of this inquiry, is such verb used as an auxiliary verb in conjugations,* or in order to connect the attribute with the substantive, or for the purpose of designating the presence of a being or thing in a certain place. In the Indian sentences corresponding with, I

* The exception with respect to the Passive voice, in the language of Chili, has been stated. With that exception, the assertion in the text applies to all the languages of South America which have been investigated.

am loved, I am good, I am in New-York, the substantive verb is never used.

Passing over minor points, the fundamental characteristic, the universal tendency to concentrate in a single word a complex idea, or several ideas between which there is a natural connexion, or which present themselves together to the mind, prevails equally amongst all the nations of North America. For the proofs of this fact, in reference to the Indians of the United States and of the more northern regions of America, I beg leave to refer principally, though not exclusively, to the various works of Mr. Duponceau and of Mr. Pickering, and to the Synopsis of the Indian Tribes, by the author of this Essay. The substance of Mr. Duponceau's views will be found in his Report of 12th January, 1819, to the historical committee of the American Philosophical Society, and in his Prize Essay on the Algonkin languages, which, in the year 1835, obtained the philological premium from the Royal Institute of France. Mr. Pickering's valuable works, to some of which he has not even affixed his name, are unfortunately scattered, and consist of several essays, published in the collections of the Massachusetts Historical Society, in the transactions of other scientific bodies, and in the Appendix to the sixth volume of the Conversations-Lexicon (Encyclopedia Americana). To his Essay on the Indian Languages in that Appendix, as of a general nature, I would call specially the attention of the reader.

The union of the possessive pronoun with the noun, and of the verb with both the nominative and objective cases of the pronoun, is but one of the applications of the general principle of concentration. It will be seen by referring to the above-mentioned works, that not only these grammatical forms, but also all the various modes of forming derivatives and compound words, either by the insertion of particles, or by the union of verbs with nouns or verbs, are found in the Eskimo, the Algonkin, the Iroquois, the Sioux, the Cherokee, the

Choctaw, the Muskogh, the Caddo, and indeed in all the languages of the northern Indians which have been investigated.

Thus in the Eskimo, certain terminations added to the primitive verb modify its sense: *Arau*, he is used to; *karpok*, he begins to; *uarpok*, he continues to; *saerpok*, he ceases to; *narpok*, he does nothing but to; *tarpok*, he intends to; *jekpok*, he was on the point to. And there are also particular terminations to express the ideas of, probably, in a different manner, better, ill, attentively, faithfully, hardly, rarely, wishing, expecting, doing for the first time, etc. (Mithridates.)

Their compound words enable also the Eskimaux to express a number of ideas by a single word. From *aulisarpok*, he fishes, and from other verbs meaning, to go to, and to hasten: *aulisariartorasuarpok*, he hastens to go fishing. (Duponceau.) From *agglekpok*, he writes, *aglekkigiartorasuarniarpok*, he goes away hastily and exerts himself to write. (Crantz.)

Several writers have taken it for granted, that the Eskimaux were a different race from the other Indian nations of America. Their language is eminently polysynthetic, and, in that respect, in its mode of forming other derivative or compounded words, as well as in its grammatical forms, it is perfectly similar to the other Indian languages, and evidently belongs to the same family. The physical type seems to be essentially the same, and no further varied than might be expected from the excessive severity of the climate. There is not in their size a greater difference between them and the Algonkins, than between the Laplanders and the Finns. With respect to their true color, not easily discernible, Captain Clavering, who reached the most northerly inhabited parts of the eastern coast of Greenland, having thoroughly washed a boy, found that he was copper colored.

In the Algonkin are found the reciprocal, causative, continuous, habitual forms; also such as express, I do it with

another, I do it instead of another, I do it for the use of another; I see one far off, near, one whom I know; and a multitude of compound words of which Mr. Duponceau has given a great many instances. Delaware: *Amanganaschquiminschi*, the tree with large leaves like the hand (Spanish oak). Chippeway: *kisoghéninjenin*, I take thee by the hand. (Schoolcraft.) Massachusetts: *wut-ap-pe-sit-tuk-quis-sunnoo-weh-tunk-quoh*, and kneeling down to him. (Eliot's Bible.) Delaware: *N'schingiwipoma*, I do not like to eat with him. The same word and form occur in the language of Chili: *iduanclolavin*. (Duponceau.)

The frequentative, causative, continuative forms are found in the Iroquois, the Choctaw, and the Cherokee; also those expressing, to do something with another person, to do something with an instrument, &c. &c.; and, in the Cherokee, many other nice distinctions, amongst which may be enumerated the collective and distributive forms. I tie two persons together, and, I tie them both each separately, are two distinct verbs. I am going to tie it over again with it, *Galungstisawtanega*, is again another.

We have in this language and in the Tarasca a remarkable illustration of the habit of the Indians to employ specific terms. It appears by a communication of the Rev. Mr. Buthrick to Mr. Pickering, that thirteen different verbs are used to express the action of washing in the Cherokee. Perhaps as many are used in the Tarasca to express the same action. The primitive verbs are, in Cherokee, *Cutowo*, I wash myself; in the Tarasca, *hoponi*, I wash.

	Cherokee.	Tarasca.	Tarasca particles.
I am washing my head	culestula	hopohtsini	tsi
another's head	tsestula		
my face	cucusquo	hopongarini	gari
another's face	tsecusquo		
my hands	tacasula	hopocuni	cu
another's hands	tatseyasula		
my feet	tacosula	hoponduni	du
another's feet	tatseyasula		
my clothes	tacungkela		
dishes	tacuteya		
a child	tseyuya		
meat	cowela		
my mouth		hopomuni	mu
my throat		hoponchani	cha
my back behind		hopohparani	para
a bed } my arms }		hopoxuni	xu

The particles which determine the meaning of the verb do not appear to have, in either language, any connection with the words which signify, the head, face, hands, feet, &c. In both, these particles are applicable to other verbs than, to wash. It is expressly stated that in the Cherokee the verbs, to love, take, possess, leave, die, may be modified in the same manner. Mr. Pickering observes that the same thing is found in some of the languages of South America; and he quotes Gilii, who informs us that in some of the languages of the Oronoko to express "I wash my face," requires a different word from that which would express "washing my feet, my hands," &c.; that the heat of the body, of a fire, of the sun, and of the climate, have each a particular word. Again; in that language (the Tamanacan), there are distinct words for the verb, to eat, according to the thing eaten; a distinction which occurs in the Algonkin and several of the other Indian languages.

The longest word in the Cherokee is

Wi-ni-taw-ti-ge-gi-na-li-skaw-lung-ta-naw-ne-li-ti-se-sti,

which means, "they will by that time have nearly done grant-

ing (favors) from a distance to thee and to me." But this is clearly a word made by a missionary, not at all in common use, and which shows only that intelligible words of any length, and corresponding with whole sentences, might be formed by analogy, in conformity with the character and rules of the language. It may be observed generally, that a great portion of those very long words have been invented by missionaries, both in Mexico and in the United States, for the purpose of expressing sacred things or abstract ideas new to the Indians. In the Mexican, the word for "original sin," already quoted; in the Delaware, *Schiwelendamowitchewagan*, repentance.

Another feature common to all the Indian languages which I had an opportunity to examine deserves to be mentioned.

In all these languages distinct words are used to express in the most minute manner, the different species of kindred, younger and elder children, brothers and sisters, paternal and maternal grandfather, grandmother, uncles, aunts, &c. This is only a special application of the general habit of giving distinct, specific names to every object, animated or inanimate. But it is remarkable that, in all the Indian languages, the words used by the women for these various species of relationship or kindred, differ from those used by the men; and moreover that, with some rare exceptions, this is the only instance in which there is any difference in the language of the two sexes.

The Otomi differs essentially from the other Indian languages, but has still, in its grammatical forms, some features in common with them. The abridged view of their grammar has been extracted from that of De Neve y Molina, of whom the Spanish astronomer Ferrer (who presented the copy to the American Philosophical Society) says, that the author was an Otomi by birth, that he knew his language, but not so well the Spanish; and that he was no philosopher. For that very reason, he had no theory; he gives the language as it is, and I believe that his facts are generally correct. But his method

is defective, his inferences may often be erroneous; and the true character of the language cannot be understood without the aid of the Essay of the learned Mexican Don Manuel Naxera, published in the fifth volume of the new series of the transactions of the American Philosophical Society.

The fundamental difference between this and the other Indian languages is its monosyllabic character. Three general principles are laid down by Mr. Naxera. First: words consist of one or two syllables; a few which have three syllables he believes to have been formed after the Spanish conquest. Secondly: each syllable, with few exceptions, has a meaning, and is therefore a word. Thirdly: in words of more than one syllable, each syllable preserves its primitive meaning. He makes two exceptions: first, that in a few instances the original meaning of the syllable has been forgotten; secondly, that the pronominal particles used in conjugating, and which he calls empty (vacuæ), have no meaning. As these have a very clear and determinate meaning in the conjugations, it is presumed that the author meant to say that, when not thus used, they lost that meaning in compound words. Mr. Naxera has sustained his opinion by numerous illustrations, which leave no doubt that such is the general character of the language. It seems to me that there are exceptions to the general position that all the words of more than one syllable are compounded. An examination of the vocabularies* seems to prove, that there are many words of two syllables, which in their nature are primitive and can hardly be supposed to be compounded.

Neve y Molina states that there are many such words, which in common speaking are syncopized and become monosyllables; and he gives several very precise rules showing how they are to be syncopized; for the mode of doing it varies according to the termination of the word. Decisive as this

* Besides a vocabulary of about two thousand words annexed to the grammar of Neve y Molina, we have another of a later date by Father Lopez Yepes. Mexico, 1826.

appears to be, an explanation is still wanting, showing how, in a purely oral language, it has been discovered, that words in general use were syncopized or abridged from others. As an illustration of his meaning: I love, is *di madi;* and *madi* is the body of the verb which remains inflexible through the whole conjugation. But according to him, most verbs of more than one syllable lose by syncope their last syllable. *Madi* becomes by syncope *ma;* I love God, *di ma oqha.*

On the other hand Mr. Naxera asserts, that the grammarian was mistaken, in supposing that the imperative was the root of the verb. It appears by the vocabularies that a great many verbs of two syllables have the terminations *ti*, *di*, *ni*, *hi*, *tzi*, *te*, *tze*, &c. These, according to Mr. Naxera, are the roots of verbs of different meanings, such as, to follow, to enter, to carry, to make, to produce, &c.; which, united with the root of any other verb, become the second person singular of its imperative. Thus the union of the verb *di* (exequi) with *ma*, which he considers as the root of the verb "to love," makes the imperative *madi*, love. He further states that there are, in the Otomi language, three particles denoting time: *ma*, the past; *ni*, the present; *mi*, the future, which are rarely though occasionally used; *ni di ma*, I love; which is superfluous, since *di* is that pronominal particle of the first person which designates the present. And Mr. Naxera infers, that the Otomi verbs passed through three stages: first, when neither tense, mood, nor person was distinguished in the verbs; secondly, when, with the aid of another verb, they formed the imperative in the manner above stated; thirdly, when they received from a foreign quarter their present mode of conjugation.

There does not appear to be any solid foundation for this portion of Mr. Naxera's theory.

With respect to his suggested formation of the imperative, I am not aware of its having a parallel in any other language. The imperative is almost universally the most simple of modes. It might be admitted, that it was formed by the union of

some one emphatic verb with the roots of all other verbs. But it seems altogether improbable, that the Otomies should, in order to effect that simple purpose, have used ten or twelve verbs of different meanings,* without any visible reason why, in any case, one of these should be used in preference to any other. When Neve y Molina adverts to the imperative, and says that in that mode there is no subtraction, addition, or mutation in the verb, he alludes only to the absence of the pronominal particles, by which the persons and other inflections are distinguished; and he gives the whole conjugation of the verb *nee*, to wish, to will.† In this conjugation, *ne-e* remains inflexible from beginning to end; in the second person singular of the imperative, it has no pronominal particle prefixed to it. In this particular Mr. Naxera agrees with him, and in his illustrations gives *ne-e*, volito; but he insists that the root of the verb is *ne*. Now it appears to me altogether improbable that Neve y Molina, an Otomi by birth, should have been ignorant of his own language, and have given the whole conjugation, *di nee*, *gui nee*, *y nee*, I wish, thou wishest, he wishes, if the verb had been *ne*, instead of *nee*.

The only plausible reason for the supposition, that the Otomi verbs passed through three different stages, and that the present system of conjugation was derived from the Mexican or some other foreign quarter, is the existence of three emphatic particles meaning, formerly, now, and hereafter. But such or similar adverbs are found in every language; and they afford no proof, that there was a time when they

* The Latin equivalents of Mr. Naxera for those verbs which, according to him, are used in the formation of the imperative, are, facere, efficere, virtutem habere, exigere, posse, evenire, exequi, expedire, introire, intus esse, ferre, germinare; to which he adds the adverbs, hic, ibi, simul, and some nouns. If every verb had as many modifications of its imperative, corresponding with those supposed auxiliary verbs, this would be intelligible; but each verb has but one imperative, formed in some by one, in others by another of these auxiliaries, without any motive for the selection.

† See that conjugation at large in the Grammatical Notices. Observe that the verb *ne-e* consists of two syllables.

supplied the want of conjugations. The sentence, *ni di ma*, now I love, is simply emphatic, corresponding with the English, I do love, and with the Latin union of the pronoun *ego*, &c., with the inflexion of the verb expressive of the same person.

The supposition that the Otomi conjugations, as they now undoubtedly exist, were borrowed from another language, is equally untenable. If there was a time when, in any language, verbs were pure abstractions without distinction of time, number, and person, such was the absolute necessity of these distinctions, that it would seem almost certain that they grew out of the language itself and were not borrowed from any foreign source. But the whole is a gratuitous hypothesis. We must take the language as it is; and with respect to the mode of conjugating, there is no difference of opinion, as will appear by comparing the conjugation of the verb *nee* in the grammar with Mr. Naxera's note *C* (modus conjugandi).

The fact is, that there is some resemblance between the Otomi conjugations and other grammatical forms, and those of the other Indian languages; but that they differ in many essential respects. All these differences may probably be traced to the monosyllabic character of the language; they flow immediately from the total inflexibility of the Otomi nouns and verbs, and from the general absence of suffixed particles.

It has been seen that the nouns are (with a single exception in the Tarasca) susceptible, in the other Indian languages, of no other modification, than that which is necessary to distinguish the plural from the singular; that this is generally effected, not by any inflexion, but by a suffixed particle; and that even in that respect they are defective, since there is not, in several of the languages, any plural proper for inanimate things, or even for irrational beings. In the Otomi the noun remains altogether inflexible, and the plural is distinguished from the singular only by the prefixed article, *na*, in the singular; *ya* or *ye* for the plural. The Otomi is simi-

lar to the other Indian languages, in distinguishing in a variety of instances animated beings from inanimate things, and in making generally no other distinction of sex, than by prefix- to the name of the animal, words respectively signifying "male" and "female."

The pronouns act a most conspicuous part in the conjugation of the verbs of all the Indian languages. In many instances, different pronouns are used in the different tenses and moods. Thus for instance, in the Mexican, *ni* the first person singular of the present becomes *oni* in the preterite, and *ti* the second person singular of the present becomes *xi* in the imperative. But in almost every case, the distinction of tense, mood, and voice is also distinguished by a difference in the termination of the verb. Thus in the Mexican, *ni matchia*, I teach, is the present; *oni matchi* is the preterite, and *ni matchialo*, I am taught, is the passive. In the Otomi there is no passive voice; and, in the active, the body of the verb remains altogether inflexible. In the simple tenses all the distinctions of person, number, and tense are expressed by the use of distinct pronouns. There is the same distinction in the compound tenses, (the imperfect and plusq. perfect,) with the simple addition of the particle *hma*.

Another observation is necessary. When the adjective is conjugated as in the instance in the grammatical notices, of *dna memti*, "I rich," the second person singular of the imperative is not, as in the verb proper *nee*, simply *memti*, it is *memti gue*. This *gue* is the syncopized form of the absolute pronoun *nugue*, thou; which it was necessary to add, in order to express our "be *thou* rich." In this Mr. Naxera, with a slight variation, agrees with the grammarian; in his conjugation of the adjective, he adds to it the particle *we* (instead of *gue*); *nho*, good; *nhowe*, be thou good.

Having thus stated the exceptions or objections to Mr. Naxera's theory, it appears to me that it is substantially correct in every other respect. I have not pursued the inquiry respecting the alleged similarity between the Otomi and the

Chinese, with which I am altogether unacquainted. But if both languages are monosyllabic in the same sense of the word, they must be similar in those particulars which are the necessary consequences of that fundamental principle. Of this we have an example in the various modifications, or intonations of the vocal sounds, to which recourse has been had in both languages, in order to increase the number of possible syllables and monosyllabic words. In the Otomi certainly, in the Chinese probably, the greater number of words of more than one syllable are formed by the union of two significative syllables, which preserve the original meaning. This, in the Otomi, is done in the most inartificial manner, by the simple juxtaposition of the two monosyllabic words, as may be seen in the examples given in the grammatical notices. Notwithstanding all the varieties effected by nasal, guttural, and other modifications of the vocal sounds, by different intonations and accents, there is still a great number of homophonous words that have different meanings. The article *na* is principally used for the purpose of distinguishing the noun from the verb, when both words are the same.

The distinct character of the Otomi teaches us that we must be cautious in drawing too general conclusions. It appears certain that almost all the Indian languages are similar in their grammatical forms, structure, and general character. But it does not follow that there are no exceptions. It is no more extraordinary that, in America, the Otomi and probably some other languages should essentially differ from the generality of the other American languages, than that, in the western part of Europe, the insulated Basque should to this day remain a living proof, that all the ancient inhabitants of Europe do not belong to that great family of languages, designated by the name of Indo-European. Whether the separation of the Otomi, from the other American languages known to us, took place in America, or in the country whence its first inhabitants migrated, is a question which I do not pretend to solve.

There is a coincidence in the formation of syllables, between the Otomi and the Cherokee, which may be worthy of notice. All the syllables and words end in both languages in a vocal sound.

It is well known that Sequoyah, or Guess, a native Cherokee, succeeded in forming a syllabic alphabet for that language, consisting of only eighty-five characters, which is universally used by the Cherokees when writing in their own tongue. If he did succeed, it was because every Cherokee syllable ends in a vocal or nasal sound, and that there are no other double consonants but *tl* or *dl*, *ts*, and combinations of *s* with four or five different consonants which follow it. It is true that he departed from the principle of a purely syllabic alphabet, by assigning to the *s* a distinct character. But supposing he had not done so, yet, as the language has but twenty consonants or double consonants in use, including all the varieties (*k* and *g*, *d* and *t*, *dl* and *tl*), and six vowels including the nasal sound; there are at most, and considering each vowel as a syllable, but one hundred and twenty-six possible syllables in the language. Whether there exists any other of that character, I cannot say. The number of syllables in actual use in the English probably exceeds one thousand. It is obvious that the Cherokee never could, without changing this characteristic formation of syllables, become a purely monosyllabic language, since, in that case, it would have contained but the wholly incompetent number of one hundred and twenty-six words. In order to increase that number, they resorted to a combination of syllables; and a language was produced eminently polysyllabic and polysynthetic.

But there is another important difference between the Cherokee and the Otomi. In answer to one of the queries transmitted at my request by the War Department, the Rev. Mr. Worcester replied, that there were in the Cherokee language but fifteen monosyllables, principally adverbs. In other words, the Cherokee syllables, with few exceptions, have no signification or meaning; whilst, in the Otomi, almost every

syllable is significative and preserves its meaning when making part of a compounded word. The consequence is, that every Cherokee word of two syllables may have a primitive or simple meaning; whilst every such Otomi word participates in the respective meanings of its two syllables.

The difference between the results of the two processes, supposing (which appears impossible) that the Otomi had consisted exclusively of monosyllables, is prodigious. Their fifteen vocal sounds or intonations, multiplied by their twenty consonants or double consonants, would have given but three hundred words. The possible double combinations of the one hundred and twenty-six Cherokee syllables might produce fifteen thousand words of two syllables. It is certainly a most rich and copious language; and I suspect that the Otomi, notwithstanding its numerous vocal modifications and intonations, and the resources it draws from its compounded words, is comparatively poor, and may to some extent have impeded the development of the intellectual faculties of that people. Those who, at the time of the Spanish conquest, were intermixed with the Mexicans and Tlascalans, occupied an inferior situation; and, to this day, they are represented by Don Carlos de Bustamente, (in his edition of Sahagun,) as being much less civilized than the other Indians.

It will be seen, by the appended specimens of conjugations, that there is much variety in the collocation of the verb, pronouns, and particles, which together designate the person, number, tense, and mood. The several terminations of the root of the verb may be considered as pure, inseparable inflexions. The pronoun is placed after the verb in the Tarasca and in the intransitive verbs of the Maya; and in this last case, the pronoun, except in the present and imperfect of the indicative,* is *en*, *ech*, &c., which is the objective case, (pœ-

* In the present, *in cah;* in the imperfect, *in cuchi.* This *in cah* is a defective verb, meaning, "I make," and has only those two tenses (Beltran, page 69). The imperfect *cuchi* is used in the formation of compound tenses of verbs both transitive and intransitive of the Maya.

nitet me, il me souvient, methinks). In all the other languages, the pronoun in the nominative case is placed before the verb. When in the objective case, (transitions,) it is, in some languages, as the Mexican, suffixed to that in the nominative case; in others, as the Maya, it is detached from the pronoun in the nominative, and placed after the verb.

All the particles suffixed in the conjugations are (the Poconchi excepted) used only in order to form compound tenses; and it may be that, as *cah*, *cuchi*, they are derived from other words and are significative. In the Poconchi, *ta* suffixed is the sign of the optative "may it be." Two of the particles prefixed, *bin* in the Maya, and *inva* in the Poconchi, designate the future; and both are derived from verbs meaning, "I go," in the respective languages. *Kia* is also in the Huasteca the sign of the future. All the other prefixed particles designate moods. Those of the Tarasca and the *Hihuil* of the Maya are probably separable conjunctions or particles. In the Huasteca, the particles, though prefixed to the verb, are placed after the pronoun.

With respect to the numerous particles, other than those used as aforesaid in the conjugations, which, united to nouns or verbs, modify their meaning or have the character of our prepositions, the rules for their collocation are not the same in all the different, nor uniform in the same language. But, and principally in reference to nouns, these particles are generally suffixed.

In languages destitute of inflexions designating cases, and where the meaning is determined by the position of the words, there must be fixed rules for that purpose. Some illustrations will be found in the Grammatical Notices; but this subject requires further investigation. It is also believed that researches into the formation of words in their connection with sounds might assist in the discovery of affinities between languages. For instance: the terminations *al*, *ac*, are given, in the appended tables, as the respective signs of the present and future of the intransitive verb in the Maya language;

but the said terminations are in fact *l* and *c*, preceded by a varying vowel, which vowel is always the same as the last vowel of the root of the verb, *nac-al*, to rise; *kim-il*, to die; *oc-ol*, to enter; and also in the future, *nacac*, *kimic*, *ococ*, &c. In various other cases, the vowel or consonant to be used depends on the sound of the last syllable of a preceding root. Is this a special feature of this family of languages?

Comparative View of the Pronouns.

Pers.	Absolutes occasionallly used in Conjugations.	Possessive.	Used in Conjugations.		
			Nominative.		Objective.
			Present.	Other Tenses.	
Mexican.					
Sing. 1st	nehuatl	no	ni, ne	oni (pret. etc.)	nech
Sing. 2d	tehuatl	mo	ti, te	xi (imperat.)	mitz
Sing. 3d	yehuatl	i	omitted, ye		k, ki
Plur. 1st	tehuan	to	ti		tech
Plur. 2d	amehuan	amo	an, am		amech
Plur. 3d	yehuan	in	omitted		kin
Huastheca.					
Sing. 1st	nana	u	na | u | in		tan
Sing. 2d	tata	a, ana	ta | a, ana | it		tat
Sing. 3d	jaja	in	a | in		chi?
Plur. 1st	huahua	huahua	huahua ya		ya
Plur. 2d	xa	xaxa	xaxa ya		taxi
Plur. 3d		baba	baba		hua, a
Maya.		Nouns beginning with a	Verbs beginning with a		
		cons. | vowel.	cons. | vowel.		
Sing. 1st	ten	in | u	in | u		en
Sing. 2d	tech	a | au	a | au		ech
Sing. 3d	lay	u | y	u | y		ic, ah
Plur. 1st	to-on	ca | ca	c | ca		on
Plur. 2d	to-ex	a-ex | au-ex	a-ex | au ex		ex
Plur. 3d	lo-ob	ulob | u-lob	u-lob | u-lob		ob
Pocoxchi.					
Sing. 1st		nu | u	nu | inu | in	ixnu (preter.)	kin
Sing. 2d		a | au	na | nau | at		ti
Sing. 3d		ru | r	inru | inr		in
Plur. 1st		ca | ca	inca | ink		co
Plur. 2d		a-ta | au-ta	nata | nauta		tita
Plur. 3d		i-tak | ki-tak	inkitak inktak		kitak
Tarasca.					
Sing. 1st	hi	huchevi	ca		reni, deni
Sing. 2d	thu	thuicheveti	care		kini
Sing. 3d	hinda, ima	hinde everi	ti		ini
Plur. 1st	hucha	hucha everi	cacuche		itzini, kini
Plur. 2d	thuca	thuicheveti	cahtsi		xsini
Plur. 3d	hicha imax	hicha everi	tix		
Otomi.				*Preter. Fut.*	
Sing. 1st	nuga	ma	di	da, xta ga, gu- [axta.	gui, ki
Sing. 2d	nugue	ni	gui		y
Sing. 3d	nuny	na, ni	y		bi, ba
Plur. 1st	nugahe	ma he	di he		nugahe, gahe,
Plur. 2d	nugue gui	ni gui	gui gui, guihu,		gui, ki [khe
Plur. 3d	nuyu	nuyu	yyu		biyu, bayu

Conjugations of the Present of the Indicative.

		INTRANSITIVE.				TRANSITIVE.				
	Pers.	Pronoun.	Verb.	Tense	Plural.	Nom. & O ject. Pronoun	Verb	Tense.	Pl.	
Mexican. *nemi,* to live.	S. 1st	ni	nemi			nik	matchi	a		I teach him. *Nik, tik, &c.* are the combination of the nominative and objective cases of the pron.
	S. 2d	ti	nemi			tik	matchi	a		
	S. 3d		nemi			k	matchi	a		
	P. 1st	ti	nemi			tik	matchi	a		
	P. 2d	an	nemi			ank	matchi	a		
	P. 3d					k	matchi	a		
						Pronoun Nom.	Verb.	Obj. Pron. & ten.		*Yo se lo hago,* I do it to him.
Huasteca. *utahjal,* I make, without expressing the object is conjugated as if intransitive.	S. 1st	nana u	tahj	al		u	tah	chi-al		*Chi* appears to be the objective pronoun *him: al* is the sign of the present.
	S. 2d	tata a	tahj	al		a	tah	chi-al		
	S. 3d	jaja in	tahj	al		in	tah	chi-al		
	P. 1st	huahua ya	tahj	al		huahua	tah	chi-al		
	P. 2d	Xaxa ya	tahj	al		xaxa a	tah	chi-al		
	P. 3d	Baba	tahj	al		huahua	tah	chi-al		
Pocoxchi. *kinki,* I say.	S. 1st	kin	ki			nu	locoh			I love. (The distinction between 'I love' and 'I love him,' is not stated in the Grammar.
	S. 2d	Ti	ki			na	locoh			
	S. 3d	in	ki			inru	locoh			
	P. 1st	koha	ki			inka	locoh			
	P. 2d	ti	ki		ta	na	locoh		ta	
	P. 3d	ki	ki		tak	inki	locoh		tak	
		Verb.	Tense.	Pron.	Tense. Pl.			Obj. pron. of pre		
Maya. *nacal,* to rise.	S. 1st	nac	al	in	cah	ten	cambez	ic		I teach him.
	S. 2d	nac	al	a	cah	tech	cambez	ic		
	S. 3d	nac	al	u	cah	lay	cambez	ic		
	P. 1st	nac	al	c	cah	to-on	cambez	ic		
	P. 2d	nac	al	a	cah ex	te-ex	cambez	ic		
	P. 3d	nac	al	u	cah ob	lo-ob	cambez	ic		

		TARASCA.				OTOMI.				OTOMI.
		Verb.	Tense.	Pron.	Plur.	Pronoun	Verb.		Pl.	
Tarasca. *pahaca,* I carry, without expressing the object.	S. 1st	pa	ha	ca		Di	nee			*Di nee,* I wish.
	S. 2d	pa	ha	care		Gui	nee			
	S. 3d	pa	ha	ti		Y	nee			
	P. 1st	pa	ha	ca	cuche	Di	nee		he	
	P. 2d	pa	ha	ca	htsi	Gui	nee		gui	
	P. 3d	pa	ha	ti	x	Y	nee		yu	
		Pronouns nom. and obj.						Obj. Pron.		
I carry him.	1st	bihini	pa	ha	ca	di	nee	ba		I wish it.
	2d	thuhini	pa	ha	care &c.	gui	nee	ba	&c	[it. thou wishest

But the last pronoun *ca, care,* &c. may be omitted.

Comparative View of the Tenses, Moods, and Voices.

		MEXICAN. Matchia, to teach.				TARASCA. Pani, to carry.				POCONCHI. Locoh, to love.				OTOMI. Ganee, to wish.		
		Part's.	Pron.	Verb.	Inflexions.	Particles.	Verb.	Inflexions.	Pron.	Particles.	Pron.	Verb.	Part'es.	Pronoun.	Verb.	Particl's.
Indicat.	1st Pers. Pres.		ni	matchi	a		pa	ha	ca		nu	locoh		di	nee	
	Imperf.		ni	matchi	aya		pa	hambi	ca					di	nee	hma
	Preterite.		oni	matchi			pa		ca		ixnu	locoh		da	nee	
	Comp'd do.													xta	nee	
	Plusq. Perf.		oni	matchi	ca		pa	p-hi	ca					xta	nee	hma
	Future.		ni	matchi	az		pa	va	ca	inva	nu	locoh		ga	nee	
	Comp'd do.					Thuvih	pa	va	ca					guaxta	nee	hma
Imperative.	2d Pers.	Ma	xi	matchi	a		pa			cha		locoh			nee	
Optative.	1st Pers. Pres.	Ma	ni	matchi	ani	Ikini	pa	ha	ca		nu	locoh	ta			
	Imperf.	Ma	ni	matchi		Ikini	pa	piria	ga							
	Preterite.					Ikinitsiris	pa		ca		ixnu	locoh	ta			
	Plusq. Perf.					Ikinitsiris	pa	p-hi	ca							
	Future.		ni	matchi	azkia	Ikini	pa	va	ca	inva	nu	locoh	ta			
Infinitive.				matchi } matchi }	az a		pa	ni				locoh		ga	nee	
Pass. Voice.	1st Pers. Pres. Ind.		ni	matchi	alo		pa	ngaha	ca		ki	loco	nhi	The Otomi has no pass. voice.		

		HUASTECA. Utahjal, I make.				MAYA.—TRANSITIVE. Cambez, to teach.				MAYA.—INTRANSITIVE. Nacal, to rise.					
		Pronoun.	Particl's.	Verb.	Inflex's.	Particles	Pronoun	Verb.	Inflex's.	Particles.	Particl's	Pron'n.	Verb.	Inflex's.	Pron'n.	Particles.
Indicat.	1st Pers. Pres.	Nana u		tahja	l		ten	cambez	ic				nac	ul	in	cah
	Imperf.	Nana u		tahja	litz		ten	cambez	ic	cuchi			nac	al	in	cuchi
	Preterite.	Nana u		tahja	itz		in	cambez	ah				nac		en	
	3d Pers. do.												nac	i	en	
	1st Pers. Plusq. Perf.	Nana u		tahja	lac		in	cambez	ah	ili cuchi			nac		en	ili cuchi
	Future.	Nana	kia	tahja		Bin	in	cambez			Bin		nac	ac	en	
	Compound do.						in	cambez	ah	ili cochom			nac		en	ili cochom
Imperative.	2d Pers.	Tata	ka	tahja				cambez					nac		en	
Optative.	1 Pers. Pres.	Nana	kia	tahja			ten in	cambez				ten	nac	ac	en	
	Imperf.	Nana u		tahja	lac	Hihuil	in	cambez			Hihuil		nac	ac	en	
	Preterite.					Hihuil	in	cambez		cuchi	Hihuil		nac	ac	en	cuchi
	Plusq. Perf.					Hihuil	in	cambez		ili cuchi	Hihuil		nac	ac	en	ili cuchi
	Future.					Hihuil	in	cambez		cochom	Hihuil		nac	ac	en	ili cochom
Infinitive			tin	tahja	b			cambez					nac	al		
Pass. Voice.	1st Pers. Pres. Indic.		tanin	tah	chial		ten	cambez	abal	o	This, being a neuter verb, has no passive voice.					

Comparative View of the Compound Conjugations or Transitions (Present Indicative).

		ME	US	THEE	YOU	HIM	THEM
ESKIMAU.							
Ermipk	I			*ermikp* aukit	*ermikp* ause	*ermikp* ara	*ermikp* aka
to wash	We			" autigat	" ause	" arPut	" auvut
	Thou	*ermikp* arma	*ermikp* autigit			" at	" atit
	Ye	" ausinga	" ausigut			" arse	" eit
	He	" anga	" atigut	" atit	" ase	" a	" ei
	They	" anga	" atigut	" atit	" ase	" aet	" ase
ALGONKIN.							
(DELAWARE).	I			k' *dell* ell	k' *dell* lo humo	n' *dell* an	n' *dell* a wak
Luen	We			k' " le neen	k' " lo hena	n' " a neen	n' " a wawuna
to say	Thou	k' *dell* i	k' *dell* i neen			k' " an	k' " a wak
	Ye	k' " i himo	k' " i hena			k' " a nowo	k' " a wawak
	He	n' " uk	n' " gu ana	k' " an	k' " gu wa	w' " ak	w' " a wak
	They	n' " ge	n' " ge neen	k' " ge	k' " ge himo	w' " a nowo	w' " a nawak
CHOCTAW.							
Tokcha	I			chit *tokcha* ill	huchit *tokcha* ill	*tokcha* ill	oklat *tokcha* ill
to tie	We			e chit "	e huchit "	e "	oklat e "
	Thou	is sut *tokcha*	is pit *tokcha*			ish "	oklat ish "
	Ye	hus sut "	hus pit "			hush "	oklat hush "
	He	sut "	pit "	chit "	huchit "	*tokcha*	oklat "
	They	okla sut "	okla pit "	okla chit "	okla huchit "	okla "	oklat "
MEXICAN.							
Matchia	I			ni mitz *matchia*	na mech *matchia*	ni k *matchia*	ni kin *matchia*
to teach	We			ti mitz "	ta mech "	ti k "	ti kin "
	Thou	ti nech *matchia*	ti tech *matchia*			ti k "	ti kin "
	Ye	am nech "	an tech "			an k "	an kin "
	He	nech "	tech "	mitz "	a mech "	k "	kin "
	They	nech "	tech "	mitz "	a mech "	ki "	kin "
MAYA.							
Mock	I			ten kin *mock* ech	ten kin *mock* ex	ten kin *mock* ic	ten kin *mock* ob
to tie	We			to-on ka " ech	to-on ka " ex	to-on ka " ic	to-on ka " ic ob
(The nom. pl.	Thou	tech ka *mock* en	tech ka *mock* on			tech ka " ic	tech ka " ob
of 1 and 2 pers.	Ye	te ex ka " en	te ex ka " on			te ex ka " ic	te ex ka " ex ob
doubtful.)	He	lay ku " en	lay ku " on	lay ku " ech	lay ku " ex	lay ku " ic	lay ku "
	They	lay ob ku " en	lay ob ku " on	lay ob ku " ech	lay ob ku " ex	lay ob ku " ic	lay ob ku " ob
TARASCA.							
Pani	I			hi kini *paka*	hi sini *paka*	hi hini *paka*	hi hichani *paka*
to carry	We			hucha kini "	hucha sini "	hucha hini "	hucha hichani "
	Thou	thu reni *paka*	thu tzini *paka*			thu hini "	thu hichani "
	Ye	thucha reni "	thucha tzini "			thucha hini "	thucha hichani "
	He	hinde reni "	hinde tzini "	hinde kini "	hinde sini "	hinde hini "	hinde hichani "
	They	hindex reni "	hindex tzini "	hindex kini "	hindex sini "	hindex hini "	hindex hichani "

SECTION II.

NUMERATION.

ARITHMETIC or Numeration has necessarily preceded Calendars, or any attempt to compute time. Men must have known how to count as far as 365, before they ascertained that the solar year consisted of 365 days. It is well known that almost all nations, in forming their system of numeration, have adopted a decimal arithmetic, and that this was the natural result of men first beginning to count by their ten fingers. This is the case with all the Indian tribes within the United States; though it must be allowed, that there is much confusion and but little regularity, in the formation of the names expressing the higher numbers, which they hardly ever wanted. The arithmetic of the Peruvians and of the Araucanians is purely decimal.

Traces are found in several of the Indian languages of their having first counted by fives. This has already been pointed out in the Eskimau, the Algonquin, and the Choctaw. The primitive mode of counting by the fingers is still apparent in the Eskimau of Hudson's Bay, where the names of the numerals, 8, 9 and 10, mean respectively the middle, the fourth, and the little finger.

This primitive mode of counting by fives is also apparent in the Mexican, the Otomi, and the Carib languages.

Mexican,	1 Ce	6 Chicha ce	Otomi,	1 Ra	6 Ra to
	2 Ome	7 Chic ome		2 Yoho	7 Yo to
	3 Yey	8 Chicu ey		3 Hiu	8 Hia to
	4 Naui	9 Chicu naui		4 Gooho	9 Cy to

Caribe, St. Vincent, Col. Galindo,	1 Abana	6 Abana-Lajunaguni
	2 Biama	7 Biama-Lajunaguni
	3 Irwa	8 Irwa-Lajunaguri
	4 Bamburi	9 Bamburi-Lajunaguri

Caribs, Essequibo, Mr. J. A. Van Heuvel,	1 Oween	6 Oween-puimapo
	2 Oko	7 Oko-puimapo
	3 Oroowa	8 Orowa-puimapo
	4 Oko-baimena	9 Oko-baimena-puimapo

In the Carib of St. Vincent, given by Col. Galindo, five is *abana-wajap;* ten is *sun-wajap;* and *wajap* means hand. In that of Essequibo, five is *Winectanee*, from *oween*, "one," and *aeena*, "hand."

But the characteristic of the group of nations now under consideration, is that they count by "twenties" instead of by "tens."

They have a primitive or uncompounded name for "twenty;" and, in the same manner as we count from "ten" upwards, by the multiples and the powers of "ten," so they count by the multiples and the powers of twenty. In the same manner, as we have primitive or uncompounded names for the second and third powers of "ten," viz. one hundred, and one thousand (the Greeks added "myriad" for its fourth power or 10,000); so also the American nations have primitive and uncompounded names for the second and third powers of "twenty," viz. for four hundred and eight thousand. Upon the same principle, they have no primitive or uncompounded words for the powers of "ten." They express one hundred by a word which means "five times twenty," and one thousand by a word which means "twice four hundred, plus ten times twenty." With respect to this last number "one thousand," Beltran informs us that the priests have made some change in the Maya language, by giving to the word *pic*, which originally meant "eight thousand," the meaning of one thousand." It is probable that a similar alteration has been made by the priests in some of the other languages; and thus, for instance, the name *xi*, which in the Huasteca is now given to the numeral 1000, did in the original Indian language mean 8000.

The table (A) gives a general view of the system of

numeration, in all the languages of the semi-civilized nations of Mexico and Central America of which I could obtain the numerals. These are only the Mexican, the Otomi, the Huasteca, the Maya, and the Quiche. All, therefore, as far as we know, counted by twenties; or had, if the word be admissible, a vigintesimal instead of a decimal mode of counting. The numerals of three other American languages, the only ones known to me which have the same character, have been added to the table.

It will be seen that the numerals from 1 to 19 are the same in the Maya, the Quiche, and the Huasteca, save only that, in the Maya, there is an uncompounded word (*buluc*) for the numeral "eleven." In both the Quiche and the Huasteca *uinac*, *inic*, which means "man," is the word for 20; but, in several of the multiples of 20, the word used in the Quiche for 20 is the same as in the Maya (*kal*). The word for 20 in the Mexican language (*poualli*) means "account;" in the Muysca, it is *gue*, a house; in the Carib of Essequibo, *wineet-anee*, a hand, and *carena*, a person. With the meaning of the other uncompounded names of the numerals I am not acquainted.

In the Mexican, in the Otomi, and in the language of the Indians of San Antonio of Texas, the manner of compounding the numerals, so as to distinguish addition from multiplication, is apparent and uniform. Juxtaposition alone designates multiplication. Addition is indicated by the insertion of a copulative conjunction; *om*, or *on*, in the Mexican; *ma*, in the Otomi; *co*, or *c*, in the language of San Antonio. The mode of compounding is more confused in the Maya, in the Quiche, and in the Huasteca; but there is a remarkable feature in the Maya.

The word for 20 is *kal* or *hunkal* (one 20); and the words for 40, 60, 80, 100, &c., are *cakal*, *oxkal*, *cankal*, *hokal*, &c.; meaning respectively twice 20, three times 20, four times 20, and five times 20, &c. The numerals from 21

that the name of the numeral 20 is *gue*, house; and the numeral one hundred is expressed by *guehisca*, which means 20×5.

The Caribs also count by twenties. Biet in his travels to Cayenne, as quoted by Mr. Van Heuvel, says that they (the Galibis) for five show a hand, for ten the two hands, for twenty the feet and hands. Their numerals which were taken by Mr. Van Heuvel himself at Essequibo, have, as well as those of the Muyscas, been added to the general table.

An observation of Crantz, when speaking of the Eskimaus, must also be mentioned. His words are: "Their proper numeral table is *five*: then counting on their fingers, they call *six* by the name of the first finger, and for the following repeat two, three, four, five; and count from ten to twenty with their toes. Sometimes instead of twenty they say "*a man*;" for one hundred, "*five men*." But the generality are not so learned, and the number, if above twenty, they call innumerable."

Another remarkable peculiarity of the Mexican and of the Maya, and of which traces may be seen in other languages of the same group, is the alteration which the numerals undergo according to the nature of the object to be counted. The distinctions are not always easily to be understood; and the objects of the same class, that is to say, in counting which the same altered numeral is used, are apparently of the most incongruous nature. Those stated by Father Alonso de Molina for the Mexican language are as follows.

The numerals as laid down in the table A, are used in counting animated beings, mantas, mats, paper, tortillas, ropes, skins, canoes, cycles, knives, and candles; but in counting several of these, the word *pilli* and sometimes *quimilli* is substituted for *poualli* (20).

The syllable *tetl* is added to the numerals, and these lose their last syllable (*matlactetl* for *matlactli*, *cempoualtetl* for *cempoualli*) when counting fowls, eggs, cocoa, jars, frijoles, fruits, roots, rolls, or round things.

The word *pantli* is added to the numeral, when speaking of ridges made by the plough, of walls, files of men, and of other things arranged in length.

Tlementli is added to the numeral, when speaking of speeches, dishes, bags, shields, or when a thing is doubled above another, or when speaking of things differing one from the other.

In the Maya language, the nouns have generally two terminations; the particle *il* or *el* being added, when the noun is not used in a general or indeterminate sense. But the particle *ppel* is added to the numerals under twenty for the same purpose. *Hun* means "one" in the abstract; but a man is *hunppel uinic;* a tree, *hunppel che*, &c.; so that this word *hunppel* generally supplies the place of the indefinite article; and this particle *ppel* may be applied generally, whatever may be the nature of the things to be counted. Beltran enumerates not less than seventy particles which are used in counting according to the nature of the things to be counted. Some of these seem to be abbreviations of, and others substitutes for, the thing spoken of. *Huntul* is used when speaking of a man; *hunpok* when speaking of a bird, or generally of an animal; *huncot* when speaking of a quadruped; *huncuch* when speaking of a load (cargo). Beltran, however, does not explain in what cases, when speaking of a man, you must say *huntul* instead of *hunppel;* nor whether the particle *ppel* is in every case suppressed; and there is a want of sufficient explanations or illustrations in his definitions of those seventy particles. It can only be asserted with certainty, that the ordinary numerals, as given in the table, are altered by the addition of various particles, according to the nature of the objects to be counted or arranged.

We have heretofore spoken only of the oral language. The Mexican is the only one with whose written language we are acquainted. Some inscriptions among the ruins of Copan, Palenque, &c., and the Dresden Codex, exhibit characters

which are apparently hieroglyphics; but to us they are altogether unintelligible. I am not aware of a single existing hieroglyphic painting, either in Mexico, Yucatan, or Central America, of which we have the interpretation, other than those belonging to the Atzec or Mexican proper. Don Juan Pio Perez informs us that not a single one can be found in Yucatan. He says that Landa, the first bishop of that province, ordered that all the figures and hieroglyphics, with which the Indians wrote or counted, should be burnt; that penalties were inflicted on all those who should thereafter use them; that these were enforced rigorously by the priests and the curates, who looked on the possessors of any Indian paintings as idolaters; and that this kind of persecution was such, that the learned Indians (sabios) abstained from teaching their sons the dangerous art of understanding the ancient manuscripts or paintings, and suffered these to be destroyed or lost; so that there is not now, amongst the Indians, even the recollection of their former existence.

The Mexican hieroglyphics of the numerals are well known, and in perfect accordance with the system of numeration of the spoken language. They have distinct characters for the numerals 1, 20, 400, and 8000; and these are sufficient to express any number. The unit is simply represented by a small circle; the numeral 20, by a standard shaped as a parallelogram; the numeral 400, by a feather; and 8000 by a purse, supposed to contain as many grains of cocoa. Moreover, although the number of units from 1 to 19 is generally represented by as many small circles, yet, in the same manner as they had uncompounded names for the numerals 5, 10, and 15, they also had an abbreviated and direct way of representing these numerals. This consisted in dividing the parallelogram, or hieroglyphic of twenty, into four squares, which, according as they were colored, represented either 5, 10, or 15. It seems, also, that they occasionally represented the numeral 200 by half a feather.

The mode of counting by twenty, by four hundred, and by eight thousand, had a practical influence. Bernal Diaz, when speaking of the Indian armies, counts them by so many *xiquipillis*, or bodies of eight thousand men. It is not improbable that they were divided into battalions of four hundred men each; each of these again subdivided into squads of twenty men; and that the hieroglyphic of twenty represented originally the banner or standard of each such squad. A load (cargo) of dresses, cloaks, &c., also consisted of twenty such articles. The effect which this system of numeration had on the mode of computing time will now be shown.

SECTION III.

CALENDARS AND ASTRONOMY.

Almost all the nations of the world appear, in their first attempts to compute time, to have resorted to lunar months, which they afterwards adjusted in various ways, in order to make them correspond with the solar year. In America, the Peruvians, the Chilians, and the Muyscas proceeded in the same way. It was otherwise with the nations which are the subject of this inquiry. And it must be premised, that the short period of seven days, our week, so universal in Europe and in Asia, was unknown to all the Indians, either of North or South America.

All the nations of Mexico, of Yucatan, and probably of Central America, which were within the pale of civilization, had two distinct modes of computing time. The first and vulgar mode was a period of twenty days, which has certainly no connection with any celestial phenomenon, and which was clearly derived from their system of numeration or arithmetic.

It has already been stated that, instead of the decimal mode of numeration, naturally derived from our ten fingers, the Mexicans, and other nations belonging to the same group, counted by twenties. They applied this vigintesimal numeration to their division of time, and adopted for that purpose a period of twenty days. An additional proof that such was its origin is found in the fact, that, in the same manner as the Mexicans, having first counted by fives, had primitive uncompounded names and distinct symbols for the numerals 5, 10, 15, and 20, so also the period of twenty days was divided into four small periods of five days each.

The other computation of time was a period of thirteen days, which was designated as being the account of the moon, and which is said to have been derived from the number of days when, in each of its revolutions, the moon appears above the horizon during the greater part of the night. The Indians pretended that the moon was then awake, and asleep at other times. This explanation may not appear quite satisfactory; and a period of thirteen days is not a lunar month, nor derived from it. But it is certain that it had been adopted by the priests, and that it was by it that they regulated their feasts and all their religious rites. In its origin, the period of twenty days had no more connection with the solar year than that of thirteen. Yet the mode of counting by twenty days was called the account of the sun, probably because it was that which was first adjusted so as to correspond with the solar year.

We distinguish the days of our months by their numerical order, the first, second, third, &c., day of the month, and the days of our weeks by specific names, Sunday, Monday, &c. The Mexicans distinguished every one of the days of the period of twenty days by a specific name, *Cipactli*, *Ehecatl*, &c., and every day of the period of thirteen days by its numerical order, from one to thirteen. In common parlance, we call this period of twenty days a month: but we have no proper English

name by which to designate the period of thirteen days; and that of week, sometimes given to it, does not appear appropriate. The Spanish writers have adopted that of *trecena*, derived from *trece*, thirteen. The names of these twenty days in their order, and their signification, are as follows:

1. Cipactli,	Sea Animal.	11. Ozomatli,	Ape.
2. Ehecatl,	Wind.	12. Malinalli,	Twisted Grass.
3. Calli,	House.	13. Acatl,	Reed.
4. Cuetzpalin,	Small Lizard.	14. Ocelotl,	Tiger.
5. Cohuatl,	Serpent.	15. Quauhtli,	Eagle.
6. Miquiztli,	Death.	16. Cozcaquauhtli,	Bird (aura).
7. Mazatl,	Deer.	17. Ollin,	Motion of Sun.
8. Tochtli,	Rabbit.	14. Tecpatl,	Silex.
9. Atl,	Water.	19. Quiahuitl,	Rain.
10. Itzcuintli,	Dog.	20. Xochitl,	Flower.

The leading names, *Calli*, *Tochtli*, *Acatl*, *Tecpatl*, stand in the middle of each small period of five days. And there was a fair, or market day, once in each of these small periods.

It seems that, at a very remote time, without any reference to the solar year, probably before they had any correct notions of its length, the inhabitants of Mexico or of other adjacent regions combined these two series of twenty and thirteen, for the purpose of distinguishing the several days of the period formed by that combination. Thus, if Cipactli was the first day of the month, they added to its name the number one, being the first series of thirteen. To the second and third days of the month, Ehecatl and Calli, they added respectively the numbers two and three, and so on, to the day Acatl, the thirteenth of the month, to which they added the number thirteen. The series of thirteen being then exhausted, they began again to count from one, giving to Ocelotl, the fourteenth day of the month, the number one, &c. In that manner was formed that period of 260 days, which is perpetually referred to by Gama and other writers, and which is inscribed on the face of the great Calendar Stone belonging to the principal temple of Mexico. The Codex Borgianus, that of the Vatican, and

that of Bologna, in which no reference or allusion to the solar year or years is to be found, afford abundant proof that all the feasts, religious rites, and nativities were adjusted in reference to that period of 260 days.

It is obvious that, since $13 \times 20 = 260$, the result of that combination of the two series was, that no two days, during these 260 days, could have both the same name and the same numerical character. Every day was therefore distinguished, and could not be confounded with any other day during that period. This resort to a combination of two series may appear singular, and is less simple than ours, in which we designate the days by their respective numerical order in each month. But it is a fact, and is one of the reasons adduced in support of the opinion that the Mexicans received their calendar from a foreign source. It must be however observed, that, in a few instances, which will be hereafter adverted to, the Mexicans designated their dates by the day of the month.

The first approximation towards ascertaining the length of the solar year appears to have been, that it contained about 360 days; and accordingly, the Mexican year at first consisted of eighteen of their months of twenty days each. Five supplementary days were subsequently added, making their year consist of 365 days. They thus came to the same result as the Egyptians, but by a different process, since the Egyptian calendar was founded in its origin on twelve lunar months of thirty days, to which the five supplementary days were afterwards added.

It is clear that this combination of the two series of twenty and thirteen is not sufficient for the purpose of distinguishing the days during the whole year of 365 days. After the termination of the first 260 days, the same designations of name and number again occur as in the beginning of the year. On looking at the Mexican calendars published by Clavigero and Veytia, and at that for Yucatan communicated to Mr. Stephens by Don Juan Pio Perez, it will be seen that the days of the

five last Mexican or Yucatan months are respectively the same as those of the five first months. Neither of these writers takes any notice of that defect, although Boturini had pointed it out, and discovered in what manner it was corrected. This was done by the application of a third series, consisting of nine companions or lords of the night, as they are called. Boturini (p. 57) states expressly, that these nine signs were used for the purpose of distinguishing the days of the year, and that they were not affixed to the supplementary days. He gives their names and order, which were subsequently corrected by Gama, the well-known and distinguished Mexican astronomer, whose work is the principal guide in all that relates to these subjects.

The order is the same in both, and the names, though different, have the same meaning, with the exception of the second and third, which Boturini confounded with some other mythological symbols. There is no doubt that the names and order of these nine companions, as corrected by Gama, are correct; and this is confirmed by the Indian historian Cristoval del Castillo.* They are as follows:

1. Xiuhteuctli, Tatl,	Lord of the Year, Fire.
2. Tecpatl,	Silex.
3. Xochitl,	Flower.
4. Cinteotl,	Goddess of Maize.
5. Miquiztli,	Death.
6. Atl,	Water; its symbol, the goddess Chalchiuhcueye.
7. Tlazolteotl,	Goddess of Love.
8. Tepeyolotli,	A Mountain Deity.
9. Quiahuitl,	Rain; its symbol, the god Tlaloc.

* Gama says that this Cristoval was a noble Indian, native of Tezcoco, not only because he calls himself an Indian (nehuatl), but also because he wrote in his own language, which the Mestizos or of Spanish blood always avoid. (Undoubtedly because the Spaniards are the higher caste: thus Don Fernando D'Alba, though boasting of his descent from the princes of Tezcoco, wrote in Spanish.) Cristoval wrote in Mexican the history of Tezcoco, and takes notice of the form and order of the Indian calendars, &c. His history ends in 1599; and he died in the year 1606, more than eighty years old.

The first day of the year was designated not only by the name of the first day of the month and the number one of the series of thirteen, but also by the sign *Tetl*, the first of the series of nine; and as the number "nine" is not a factor of 260, the first day of the thirteenth month, which is the 261st day of the year, though being the same day of the month and having the same numerical character as the first day of the year, was distinguished from it by the sign Quiahuitl, which is the ninth of the series of nine. And in the same manner every day of the five last months was distinguished by a sign of this series, differing from the sign of the same series annexed to the days of the five first months, which have the same name and numerical character.

Any series, consisting of a number of terms, which was not a factor of 260, would have answered the purpose intended; and it may be asked why, for instance, a series of three terms, which was sufficient, was not used, instead of one of nine terms. The answer appears to me obvious. The Mexicans did not invent those genii, deities, or lords of the night, for the purpose of correcting their calendar. They had already a place in their imaginary pantheon; and the priests, finding that series at hand, and pursuing their system of combination, used it for the purpose above stated.

The Mexicans, the Yucatanese, and probably all the neighboring nations, had a cycle of 52 years, in which the years were distinguished by the combination of two series, one of thirteen numbers (1 to 13) and one of four names. These four names were the same as those of the principal days of each of the small periods of five days: *Tochtli*, *Acatl*, *Tecpatl*, *Calli*. The Yucatan and the Chiapa cycles differ in no other respect from that of Mexico, than by the substitution of other names for these. The order of the years is seen in the following table, by which it appears that no two years could, in the same cycle, have together the same name and number, and be mistaken the one for the other.

Mexican Cycle of 52 Years.

1st year.	14th year.	27th year.	40th year.
1 Tochtli	1 Acatl	1 Tecpatl	1 Calli
2 Acatl	2 Tecpatl	2 Calli	2 Tochtli
3 Tecpatl	3 Calli	3 Tochtli	3 Acatl
4 Calli	4 Tochtli	4 Acatl	4 Tecpatl
5 Tochtli	5 Acatl	5 Tecpatl	5 Calli
6 Acatl	6 Tecpatl	6 Calli	6 Tochtli
7 Tecpatl	7 Calli	7 Tochtli	7 Acatl
8 Calli	8 Tochtli	8 Acatl	8 Tecpatl
9 Tochtli	9 Acatl	9 Tecpatl	9 Calli
10 Acatl	10 Tecpatl	10 Calli	10 Tochtli
11 Tecpatl	11 Calli	11 Tochtli	11 Acatl
12 Calli	12 Tochtli	12 Acatl	12 Tecpatl
13 Tochtli	13 Acatl	13 Tecpatl	13 Calli

The Cycle was thus divided into four periods of thirteen years, each beginning with the number one, 1 Tochtli, 1 Acatl, &c. This period of thirteen years has generally been called an Indiction by European writers. The Cycle was called by the Mexicans, *Xiuhmolpilli*; which signifies "the tying up of years." Two cycles made a period of 104 years, which they called *cehuehueliliztli* (old age); but this was not represented in their paintings.

The year 1 Tochtli is the first of the Mexican Cycle. Yet, for some superstitious reason very unsatisfactorily explained, the Atzecs did not tie up their years till the ensuing year, 2 Acatl. The Indian historian Chimalpain says, that the Atzecs or Mexicans proper tied up for the first time, in a year which corresponds with the year of our Lord 1091. But, though not placing much faith in the Mexican legends, and specially in their dates, I think that this assertion refers only to the Atzecs, and that the origin of the cycles is of a much more ancient date, though probably due to a nation of the same stock and language with the Atzecs.

A further approximation towards the true length of the solar year was attained, probably after the invention of the

cycles. It is certain, that the Mexicans had at least discovered, that the length of the solar year was about 365 days and a quarter; and that in order to correct their calendar, they intercalated thirteen days at the end of the cycle of fifty-two years; which was precisely equivalent to the intercalation of one day in every fourth or leap-year, as in our Julian year. In other words, the number of days contained in fifty-two Mexican years (including the thirteen above-mentioned days), was equal to the number of days contained in fifty-two of our years. But as that Mexican intercalation was made only every fifty-two years, it followed that the correspondence between their and our years, subsisted only during the four first years of their cycle; that, as compared with our year, they lost one day every four years, till, at the end of the cycle, this loss was compensated by the intercalation of the thirteen days. These days were considered as belonging to no one year; and every cycle began with the same day of the month, numerical character and sign.

It must be observed that the early Spanish writers, without having very precise notions on the subject, did, from the correspondence of the calendar of the Mexicans with ours, conclude that they must necessarily have corrected it by an intercalation equivalent to our bisextile year. Sahagun, a Franciscan monk, who resided in Mexico from the year 1529 to the year of his death (1590), is probably the most ancient authority. In two different places, (2d book, ch. 18, and Appendix to 4th book, page 348, Mexican edition,) he says in substance, that it is conjectured and probable that this was done by having, every fourth year, six instead of five supplementary days. Veytia is, it is believed, the only modern author who has embraced that opinion; and Gama has shown that a feast celebrated, as had been supposed, every fourth year, and relied on as sustaining that system, was in fact an annual feast. All the other modern writers agree in placing an intercalation of thirteen days at the end

of the cycle. According to Clavigero (Appendix to 5th book, vol. 1, p. 336 of English translation, Amer. edit. 1806), it was Siguenza who ascertained the fact. Boturini was of opinion, that the Toltecs did at first insert an additional supplementary day every fourth year (page 137), and that they, or rather the Mexican nations, did subsequently substitute the intercalation of thirteen days at the end of the cycle (p. 155).

It was the universal belief of the Mexicans, that the sun would be extinguished and the world come to an end, at the termination of some one of the cycles, that is to say on the last of the five supplementary days. Under that expectation, those five days were spent in mourning, all their utensils, furniture, clothing, &c., were destroyed. On the evening of this last fatal day, the priests of Mexico, followed by an immense crowd, set off after the setting of the sun, which they apprehended had perhaps been seen for the last time, for a mount two leagues distant from the city. There they waited till midnight, when they sacrificed a prisoner in order to appease their gods; and one of the priests lighted by means of friction a new fire. The success of that operation was considered as the proof, that the gods had granted at least fifty-two years more to the world. The fire was transferred with great rapidity to all the neighboring places. When the new sun arose again, all anxiety was at an end; the thirteen intercalary days were spent in feasts and rejoicings, and in renewing all their utensils, furniture, and all that related to the worship of their gods.

In the preceding observations, the names and numbers of the days have been mentioned in reference to the spoken or written language. In that which may be called the Mexican written language, each day of the month of twenty days was represented by a sign, or hieroglyphic, generally graphic, and representative in an abbreviated form of the object after which the day was named, but occasionally of a symbolic character. The numerical character, which never exceeded thirteen, was

represented by an equal number of very small circles. The nine night companions, five of whom had the same names as five of the days of the month, were also represented by hieroglyphics. But they are hardly ever inserted; and it would seem, as if this had been a secret reserved by the priests for their own use, communicated perhaps to the nobility which was educated in the temples, but concealed from the common people. It has already been stated that the hieroglyphics of these night companions were not affixed to the supplementary days, for which reason these days were called *Nemontemi*, which means "empty;" and they were considered as unfortunate, and fatal to those who were born on any of them.

Every month of twenty days was also distinguished by a specific name; and it is highly probable that each had its hieroglyphic. It is certain that the month called Quecholli had one which is known to us. But it may be doubted, whether we have any authentic representations of all of them. The hieroglyphics ascribed to Siguenza or Gemelli published by Clavigero, and those ascribed to Boturini and published by Veytia, are dissimilar in many respects.

With the exception of the nations speaking the Mexican language, we do not possess a single hieroglyphic either of the days or of the months of any other nation which inhabited the empire of Mexico, Yucatan or Central America. We have only, with respect to some of them, the names in their spoken languages of the days and months, as will be hereafter stated. The apparent hieroglyphics found engraved in the remains of Copan, Palenque, and other places, are to us altogether unintelligible.

Thus far the facts are universally agreed to by all the authors, and may be considered as certain. The points of difference are the following, to wit:

1st. There is no difference of opinion respecting either the names or the order of the days of the months. Their names and the order in which they followed each other have

already been stated. But the authors differ respecting the first day of the month. Gama, the last and most correct, and whose system has been generally adopted by Baron Humboldt and Mr. Prescott, asserts that the day called 1 Cipactli was, always and in every year throughout the cycle, the first day of the month. It is evident that if any one day was the first day of any one month, it was also the first day of every other month in the same year.

Boturini thought, as well as Gama, that the numerical character of the first day of the year was always the number "One;" but he was of opinion, that that day had always the same name (or symbol) as the year to which it belonged; that the first day of every year, designated by the name of Tochtli, was also named Tochtli, and so on for every other year.

Gemelli and Clavigero supposed that Cipactli was the first day of every year Tochtli; Mequiztli the first day of every year Acatl; Ozomatli the first day of every year Tecpatl; and Cozcaquauhtli the first day of every year Calli; and moreover that the first day of the year had always the same numerical character as the year to which it did belong.

Veytia agreed with Boturini in the opinion that the first day of the year had always the same name (or symbol) as the year to which it did belong. And he followed Gemelli, in believing that the first day of the cycle had the same numerical character as the year to which it did belong. But having supposed that the Mexicans intercalated one day every four years, this did alter the whole series in a way peculiar to him.

2d. There was some difference of opinion as to the names of the months; but this creates no difficulty, as this arose from the fact that some of the months had more than one name. There was no disagreement respecting the order of the months, which did certainly follow each other in the manner stated in the table (B). The only difference of opinion was respecting the question, which was the first month of the year. And here it must also be observed that, inasmuch as, after the termination of the eighteen months of the year and

of the five supplementary days, the ensuing year was a repetition of the same eighteen months and in the same order, it necessarily follows that whichever month was the first month of any one year in the cycle, was also the first month of every other year of the cycle. So that in order to prove that any one month was the first month of every year, it is sufficient to prove conclusively that it was the first month in any one year of the cycle.

Gama asserts that the month called Titil was the first of the year. Other authors assign the first place respectively to those months, which are either the last, the third, or the fourth month, according to Gama.

3d. Authors equally differ respecting the correspondence of the Mexican year with the true solar, or with the Julian year; or in other words, respecting the time of the solar year when the Mexican year did begin. The table B exhibits the various systems on this subject, and on the question which month was the first of the year.

4th. Finally Gama, in opposition to all his predecessors, has suggested the opinion, that the intercalation made at the end of every cycle, consisted of twelve days and a half, instead of thirteen days, or, which is the same thing, of twenty-five instead of twenty-six days for every 104 years. This if true would show that the length of the year, as ascertained by the Mexicans, differed but little more than two minutes from the true length of the solar year, as now ascertained by the most correct observations.

The two last subjects are evidently those of the highest interest, either in reference to the actual degree of astronomical knowledge attained by the Mexicans, or as relates to the question whether that knowledge was the result of their own progressive observations, or whether it was communicated to them by foreign nations. But the solution of these two last points depends essentially on that of the preliminary questions respecting the first day of the month and the first day of the year. Of the writers on those subjects, the Mexican astronomer

Gama, is not only the latest, but indeed the only one who has thoroughly investigated the questions at issue. Taking therefore his system as a basis, the proofs adduced in support of it and the conjectures of other writers will now be examined.

Days and Months.

In order to facilitate that examination, the table (C) has been prepared, which exhibits the whole system of Gama for the eighteen months of the year. And as, according to him, the same day and the same month are respectively the first day and the first month of every year throughout the whole cycle, this table, if his system be true, is a perpetual almanac for every Mexican year. But it must be recollected that, the intercalation of thirteen days being made only at the end of the cycle, this almanac corresponds with the Julian year, only during the four first years of the cycle. The table shows at once for the first year of the cycle (1 Tochtli), to which month, which day of the month, and which day of the year, any one day designated according to the Mexican mode, does correspond. Thus for instance, the day designated as 1 *Ollin*, is the 17th day of the 8th month, and the 157th day of the year. And if we should find a day designated as being the 13th day of the 16th month, the table would show that it must have been the day 1 *Acatl*, and that it was the 313th day of the year.

The first of the supplementary days had always the same name (or symbol) as the first day of the year; and inasmuch as the last of the 360 days had always the number *nine* for its numerical character, that of the first supplementary day was always the same with that of the first day of the year, plus 9. Thus if, as in the table and according to Gama, the day 1 *Cipactli* was the first day of the year, the first of the supplementary days must have been designated as 10 *Cipactli*, and the last as 1 *Cohuatl*.

The result of that combination of the series of twenty and thirteen terms respectively was, that the first day of every month had, for its numerical character, a number greater by seven than the numerical character of the first day of the next preceding month; recollecting, however, that as the second series consists only of thirteen terms, the numbers 1, 2, 3, &c., must be respectively substituted for the numbers 14, 15, 16, &c. Thence arises a new series (as appears by the table) of every day of the month, and which, though beginning with different numbers, is in its order always the same for every day. Thus the day Cipactli, if the first day of the month, had for its numerical characters, successively in each month, the numbers 1, 8, 2, 9, 3, 10, 4, 11, 5, 12, 6, 13, 7; and then again 1, 8, 2, 9, and 3. The other days, commencing respectively with different numbers from 1 to 13, had successively for their numerical character the numbers arranged precisely in the same order.

The proofs adduced in support of Gama's opinion, that the day Cipactli was always the first day of every month and of every year, are as follows, viz.:

Cristoval del Castillo states that, after the termination of the first 260 days of the year, 105 other days are added, commencing *another time* to count by 1 Cipactli; and since the 261st day of the year has the same symbolic name and numerical character, as the first day of the year (distinguished only by a different night companion), it necessarily follows, that 1 Cipactli was the first day of the year. Cristoval states this in reference to no special year, but as applying to every year of the cycle; and it appears to be stated, not in support of any system, but as a fact generally known.

In that authentic monument, the ancient Calendar Stone, which had laid buried in the great square of Mexico till the year 1790, and which is now placed in front of the cathedral of that city, the hieroglyphics of the twenty days of the month are inserted in a circular form, around the interior circle which

is a mythological representation of the sun. These hieroglyphics of the days follow each other from right to left, in their regular order, and cannot be read from left to right without subverting that order which is universally agreed to. For, if read from left to right, the day *Xochitl* would be followed instead of being preceded by *Quiahuitl*; and the order of the days reversed throughout. These hieroglyphics are divided at the top of the plate by the vertical line designated by the letters I R T; and they are separated from each other in no other place. They must therefore be counted, beginning at that line and from right to left. It is the day Cipactli which is thus designated as the first day of the month. It must also be observed, that these hieroglyphics of the days are not accompanied there with any numerical character; which proves that, although this stone is intended for the year 13 Acatl, yet the day Cipactli is always, and whatever its numerical character may be, the first day of every month.

This is further proved by the order in which the same hieroglyphics stand in the Codex Borgianus and in those of the Vatican, which Gama had not seen. In these the period of 260 days also commences with Cipactli.

In support of the opinion that the month Tititl was the first of the year, we have the authority of the same Cristoval, who says expressly, that the five supplementary days were added to the month Atemoztli, which immediately precedes Tititl. Other conclusive proofs are deduced from the great Calendar Stone, which will be hereafter stated. And Gama appears to have demonstrated that all the other suppositions are inconsistent. He has in the first place adduced another proof that the first day of the year, besides being the day Cipactli, had also the number *one* for its numerical character.

Two Indian historians, Chimalpain and Tezozomoe, have recorded the days on which the several Mexican kings ascended the throne. They agree in placing the accession of Montezuma the second in the year 10 *Tochtli* (1502),

and on the day 9 *Mazatl;* and it so happens that Chimalpain adds that this was the seventh day of the month *Tozoztontli.* Since the order of the days is always the same, and the day *Mazatl* is always the seventh after *Cipactli*, it necessarily follows, that, if Mazatl was the seventh day, Cipactli was the first day of that month; and if the first of that, it was also the first of every other month and the first day of the year. Since the numerical character of the seventh day of the month *Tozoztontli* is *nine*, "three" is the numerical character of the first day of that month, which therefore began with the day 3 *Cipactli.* In conformity with the series 1, 8, 2, 9, 3, 10, 4, 11, 5, 12, 6, 13, 7, according to which the respective days assume each successive month their numerical character, the number *three* is the fifth in order from number *one.* Since the order of the months is always the same, and since *Tozoztontli* is the fifth month from *Tititl* and began with the day 3 *Cipactli*, the month *Tititl* began with the day 1 Cipactli, which therefore is the first day of the year. This will be clearly understood by looking at the table.

But since it is assumed that the month Tititl was the first month of the year, this species of proof only shows that Gama's system is consistent with itself. He says that he has examined several other dates which give similar results, and for which he refers to his Essay on Mexican Chronology, a work which has never yet been published. Repeated proofs of this kind would convert into certainty that which is only highly probable. But the examination of this date, amongst several other reasons adduced by Gama, is alone sufficient to show, that every other system which had been suggested is erroneous and inconsistent with itself.

Boturini asserted, that the first day of every year was always designated by the name of either Tochtli, Acatl, Tecpatl or Calli; and it has been proved in the preceding paragraph that the year 10 Tochtli began with the day 1 Cipactli. Moreover, since according to him the first day of the year,

and therefore of every month of that year 10 Tochtli, was the day 1 Tochtli, Mazatl must have been the last day of every month; and the day 9 Mazatl is always 150 days subsequent to the day 1 Tochtli. If you suppose with Boturini that the first month of the year was either Atlacahualco (Gama's 3d month), or Tlucaxipehualiztli (Gama's 4th month), the day 9 Mazatl will be the last day of either Toxcatl (Gama's 7th month) or Etzcualiztli (Gama's 8th month) instead of the 7th Tozoztontli.

According to Clavigero the year 10 Tochtli would begin with the day 10 Cipactli. It is in proof that in that year the month Tozoztontli did begin by the day, 3 Cipactli. It is therefore the first day of the next ensuing month (Hueytoztli), which had the numerical character 10, and which must, according to Clavigero, have been the first month of the year, whilst at the same time he asserts the first month of the year to have been Atlacahualco which precedes by sixty days Hueytoztli. And moreover the day 9 Mazatl would have been the seventh of the month Hueypachtli, instead of, and ten months later than, the seventh Tozoztontli.

Still greater discrepancies will be found in applying that date to the system of Veytia. Since all the other systems are proved to be erroneous, and that of Gama is alone consistent with itself and sustained by the proofs which have been stated, it has in its favor the highest degree of probability of which the case is susceptible. This appears to me to be corroborated by another consideration.

According to Gama's system, the Mexican year is in every respect always the same, and his calendar therefore serves for every year and is a perpetual almanac, which requires to be corrected only in reference to the correspondence of the Mexican with the solar year; and this on account of the intercalation being made only at the end of the cycle. According to Boturini four almanacs would be wanted for the cycle; and according to Clavigero and Veytia, one for every

year, and therefore fifty-two for the cycle. It appears to me utterly improbable that, if the use of such an enormous stone as that in question, had been confined for all religious and ordinary purposes to one single year out of the fifty-two, the Mexicans should have undergone the immense labor required to bring such a mass from its quarry.*

The principal cause of the errors, respecting the name and numerical character of the first day of the year, is to be found in the erroneous views taken of the five supplementary days, which will be best explained by the following table:

Beginning and Termination of the First Years of the Mexican Cycle, according to

		Gama.	Clavigero.	Boturini.
Year 1 Tochtli	1st day of the year	1 Cipactli	1 Cipactli	1 Tochtli
1st of the Cycle	1st Nemontemi	10 Cipactli	10 Cipactli	10 Tochtli
	2d do.	11 Ehecatl	11 Ehecatl	11 Atl
	3d do.	12 Calli	12 Calli	12 Itzcuintli
	4th do.	13 Ceutzpalin	13 Ceutzpalin	13 Ozomatli
	5th do.	1 Cohuatl	1 Cohuatl	1 Malinalli
Year 2 Acatl	1st day of the year	1 Cipactli	2 Miquitzli	1 Acatl
2d of the Cycle	1st Nemontemi	10 do.	11 do.	10 do.
	Last do.	1 Cohuatl	2 Itzcuintli	1 Ollin
Year 3 Tecpatl	1st day of the year	1 Cipactli	3 Ozomatli	1 Tecpatl
3d of the Cycle	1st Nemontemi.	10 do.	12 do.	10 do.
	Last do.	1 Cohuatl	3 Quauhtli	1 Ehecatl
Year 4 Calli	1st day of the year	1 Cipactli	4 Cozcaquahtli	1 Calli
4th of the Cycle	1st Nemontemi	10 do.	13 do.	10 do.
	Last do.	1 Cohuatl	4 Xochitl	1 Mazatl
Year 5 Tochtli	1st day of the year	1 Cipactli	5 Cipactli	1 Tochtli
5th of the Cycle	1st Nemontemi	10 do.	1 do.	10 do.
	Last do.	1 Cohuatl	5 Cohuatl	1 Malinalli

It will be seen that both Gama and Boturini consider the last of the supplementary days as not to be counted as belonging to the period of thirteen days; the consequence of which is, that this period of thirteen days commences accord-

* See an account of this in a note to Gama's second edition, by his editor Bustamente.

ing to them every year with the number *one*. But as Boturini makes the first year of the cycle begin with the day 1 Tochtli, the last supplementary day of that year is according to him 1 Malinalli instead of 1 Cohuatl. Gama also considers all the five supplementary days as not belonging to any month or period of twenty days; and thus every year with him begins with the day 1 Cipactli. Both Clavigero and Boturini count these five days as being part of a month; so that, although they begin the years with different days, the first day of each year has, with both, the name or symbol of the day immediately following that of the last of the supplementary days; Clavigero thus passing from Cohuatl, the last of the supplementary days of the year, to Miquiztli; and Boturini from Malinalli to Acatl, &c.; Clavigero moreover considers the numerical character of the last supplementary day as to be counted in the period of thirteen days. And, as the year 1 Tochtli ends with him by the day 1 Cohuatl, the first day of the next ensuing year begins with the day 2 Miquiztli.

Beginning of the Year.

The Spaniards entered for the first time the city of Mexico in the year of our Lord 1519, which was the Mexican year 1 Acatl. On this point there is no doubt. It was also ascertained that the last secular feasts had taken place in the city of Mexico in the year 2 Acatl, corresponding with the year of our Lord 1507, and therefore that the preceding year, 1 Tochtli, which was the first of the cycle, corresponded with the year 1506. According to the Mexican computation, eight cycles, equal to 416 years, had elapsed since the time when the Atzecs had reformed their calendar, and had for the first time tied up their years, as they called it. The era of the Atzecs was therefore the year 1090, counting from the year 1 Tochtli, the actual beginning of the cycle, or 1091, counting from the ensuing year 2 Acatl, when they for the

first time celebrated their secular feasts. But the Tescucans commenced their cycle in the year 1 Acatl, thirteen years after, and the Tepanecs in the year 1 Calli, thirteen years before the Atzecs of Mexico. We are not informed whether their respective eras were the same as that of the Atzecs, nor how many cycles they supposed to have elapsed from the eras they might have adopted.

The fact that three nations speaking the same language, united by a strict alliance, and whose principal cities were situated on, or in the immediate vicinity of, the same lake, and but a short distance from each other, should have commenced their cycles at such different times, appears very extraordinary, and has not been explained. These three nations equally believed that the world would come to an end at the termination of some one of their respective cycles. But that epoch, which was one of great anxiety, of their most solemn feasts, and of prayers to their gods, that they might be pleased to grant them another period of fifty-two years, was different for each of those three nations. This has all the appearance of a religious schism. The priests of Mexico must have considered the anxiety, the feasts, and the prayers, which the priests of Tescuco addressed to the gods in the year 1 Acatl (1519), as an act of great folly, since the danger was then over, and the gods had granted them thirteen years before (year 1 Tochtli or 1506) a respite of fifty-two years. And the priests of Tescuco must have entertained a similar opinion respecting the time when those of Mexico celebrated their secular feasts. Whether this was considered an essential point of doctrine, and whether the priests of each place did respectively anathematize the others, we are not told. It does not appear that this dissidence had any effect on the political union of the nations; but it produced some difference in their respective calendars.

It must be recollected, that the correspondence between the Mexican and Julian year must be calculated for the first

year of the Mexican cycle, immediately after the intercalation of thirteen days, which was equivalent to the thirteen bissextile days which had, during the same period, been added to the Julian years by the intercalation of one day every four years. Subsequently, and from the beginning of their cycle, the Mexican, compared with the Julian calendar, lost one day every four years; and a corresponding correction is necessary, whenever one of the intermediate Mexican years is compared with the Julian year.

Thus, supposing the correspondence between the Mexican year 1 Tochtli, the first of their cycle, with the corresponding Julian year 1506 to have been ascertained, the Mexicans had in the year 1 Acatl (1519) lost, as compared with the Julian year, the three days which had, in this, been added to the years 1508, 1512, and 1516. But that same year 1 Acatl was the first year of the Tescucan cycle, and immediately following their periodical intercalation of thirteen days. There was therefore, in that year, a difference of three days between the Mexican and the Tescucan year. The day which, at Tescuco, was the thirteenth day of the month Quecholli (a date which will be discussed), was counted at Mexico as the sixteenth day of the same month. This difference is exhibited and explained in the table C², by which it appears that this difference of three days continued the same from the year 1 Acatl to the year 1 Tochtli, that is to say, during the last thirty-nine years of the Mexican, or first thirty-nine years of the Tescucan cycle; and that it amounted to ten days from the year 1 Tochtli to the year 1 Acatl, that is to say, during the first thirteen years of the Mexican, or thirteen last years of the Tescucan cycle.

We have two certain Spanish dates, that of the eighth of November, 1519, old style, which is that of the first entrance of Cortes into the city of Mexico; and that of the thirteenth of August, 1521, which is that of the final capture of the city and of King Guatimotzin. But we derive no assistance from

the last of these dates. No Indian painting has been preserved which refers to it; and the few Indian writers who allude to the event designate the day on which it happened as being 1 Cohuatl. This is the last day of the year, and cannot, under any system whatever, be made to correspond with the thirteenth of August. Gama has explained this singular designation, by showing that, avoiding to mention the identical day, these writers allude to the one called 1 Cohuatl in a metaphorical sense. That day was the last of the supplementary days and of the year, the fatal day on which, at some time or another, the world must end; and by that accursed day they designated that one on which their empire and their independence had been destroyed. Cristoval del Castillo mentions 1 Cohuatl, and then depicts in strong terms the destruction of the Mexican empire. Chimalpain mentions the same day, and then refers to the Christian feast of St. Hypolitus. Tezozomoc, after carrying his relation to the accession of Guatimotzin, omits designedly the capture of Mexico and the subsequent events till the year 7 Calli (1525), when he resumes his narration, which terminates in the year 9 Acatl (1579).

The eighth of November, 1519, old style, the date of the first entrance of the Spaniards into Mexico, is the only one which we can compare with certainty with the Mexican calendar. An old Indian painting, made probably a short time after the conquest, had been preserved, which represents that event. At the top is seen the hieroglyphic of the city of Mexico; and under it, a Spanish horseman armed with a lance, who is followed by a foot soldier of the same nation, on whose leg appears the hieroglyphic of the month Quecholli, together with the number thirteen, designated by as many small circles. Thus this event, according to the Indian computation, took place on the thirteenth day of that month; and that day was, as appears by the Table C, the 313th day of the year. The year 1519 was not a leap year, and the eighth

of November was in that year the 312th day. Therefore the year 1 Acatl began the thirty-first of December of the Julian year 1518, old style. This is the remarkable correspondence between the Mexican and the Julian or Spanish year, which struck so forcibly the first Spanish writers.

A question however arises, whether this painting be of Mexican or Tescucan origin. If Mexican, the year 1 Acatl had, on account of the omission of the bissextile days, receded three days since the year 1 Tochtli; and this year, which was the first of the cycle, must have commenced the third of January, old style. But if Tescucan, the year 1 Acatl, being the first of their cycle, must have begun on the thirty-first of December. The day which was at Tescuco the thirteenth of Quecholli, must at Mexico have been the sixteenth day of the same month; the year 1 Acatl in that city must have commenced on the twenty-eighth of December, and the year 1 Tochtli, the first of the Mexican cycle, must have commenced on the thirty-first of December. Gama is of this last opinion, principally because he believes Cristoval del Castillo, who refers to the day, to have been a noble Tescucan and not a Mexican. This difference of three days is of very little importance as regards the connection of the Mexican with the solar year. Either date is an approximation sufficient to corroborate the opinion, that the Mexican year was originally intended to commence at the winter solstice. It becomes important, when it is used as a basis for a comparison of dates derived from eclipses. Gama's opinion is at least probable, and may be admitted.

In the absence of any authentic paintings designating dates of such events as might be compared with European dates, we have no other aid than the statements of the Indian authors who wrote after the conquest. These are confused and sometimes contradictory, partly because those who wrote after the Gregorian reform often confounded the new and old styles; partly because they did not attend to the correction which

was necessary in the years subsequent to the first of the cycle, on account of the omission of the bissextile days. With respect to events prior to the Spanish conquest, the Mexican history was utterly unknown in Europe, and that of Europe equally unknown in Mexico. The whole correspondence of Mexican events with European dates, or with the solar year, depends on the correctness of the above-mentioned date of the entrance of the Spaniards into Mexico. Celestial phenomena visible in Mexico and Europe were the only positive facts the dates of which, according to the respective calendars of the two countries, might be ascertained and compared. Gama thought that an investigation of the eclipses of the sun visible in both continents might throw much additional light on the subject. The precise dates of eclipses in reference to the solar year might be calculated, provided sufficient labor was bestowed on the subject; and this was most faithfully performed by Gama. But in order to constitute a comparison, it was necessary that those eclipses should have been observed and recorded with great precision by the Mexicans, and that such record should have been preserved. It will soon be seen how defective and uncertain the Mexican accounts are in that respect; and this is the vulnerable part of Gama's process.

Besides this, instead of taking the dates as given to us and according to the old style, then in force, he has unnecessarily, as it seems to me, entangled himself in conversions of old into new style. In so doing he has made an evident mistake of one day, which affects all his calculations, and which, though of no importance in respect to the commencement of the year, is fatal to any inference respecting the knowledge of the length of the year ascribed to the Mexicans. The mistake is this. He has converted the above-mentioned eighth of November, 1519, old style, into the seventeenth of November, new style, adding only nine days, which for that year was perhaps proper. But he has converted the twenty-eighth of May, 1481, the date of the eclipse on which he relies for

his calculation, into the seventh of June, new style, adding therefore in that year ten days. Now it is very clear that, since the Julian is longer than the solar year, and was perpetually gaining over it, if he had thought proper to make any difference between the years 1481 and 1519, he should, in the conversion of old into new style, have added less instead of more to the year 1481 than to the year 1519. Considering those two years, which differ only by about seven hours, as on a par, it is obvious that he ought at least, in making the conversion, to have added to the old style an equal number of days in each year. The result was, as might be expected, a mistake of one day in his calculation.

Gama does not quote or allude to any single Indian painting, in which the day of the eclipse of 1481, or any other indeed, is recorded. But the Indian authors who wrote after the conquest mention two great eclipses of the sun, which happened in the interval of five years, and were memorable, on account both of their magnitude, and of the events which preceded them. The first happened after a celebrated victory of the King Axayacatl over the Matlatzincas of Xiquipilco, and the other immediately after the death of the same king. The only notices of their dates, as given by those Indian authors, are the following.

Don Domingo Hernandez Ayopotzin, a Mexican, and grandson of Montezuma, says, that the victory of Axayacatl took place in the year 12 Tochtli (1478), and that the eclipse happened in the same year, on the day 1 Ollin.

An anonymous author gives for the date of this victory and of the eclipse, the year 10 Tecpatl (1476), but does not mention the day.

Another anonymous author assigns to the victory the date of the year 12 Tochtli (1478), and places the figure of the eclipse (without saying that it was total) in the year 13 Acatl (1479), omitting also the day.

Another anonymous author gives, without mentioning the

days, the year 2 Calli (1481) as the date of the death of King Axayacatl and of the eclipse that followed.

Finally, the death of King Axayacatl actually took place before the seventh of June, 1481, N. S., since it is ascertained, on the authority of Chimalpain and Tezozomoc, that his successor, King Tizoc, was installed the second day of that month.

Gama found by calculation, that there had been no eclipse of the sun visible in Mexico during either of the three years 1476, 1478, and 1479, and that there had been one of inferior magnitude in the year 1480. But he found that two great eclipses were visible at Mexico, the first on the thirteenth of February, 1477 (day 13 Malinalli, year 11 Calli), in which near eleven digits of the sun were eclipsed; and the other on the twenty-eighth of May, O. S., of the year 1481 (2 Calli), which commenced at $7^h\ 35'$ and ended at $10^h\ 36'$ of the morning, near ten digits eclipsed (true new moon at $10^h\ 11'\ 36''$ in the morning). And he asserts that this twenty-eighth of May coincides exactly with the day 1 Ollin, mentioned by Ayopotzin as the date of an eclipse of 1478, in which there was no eclipse. He supposes that this author made a double mistake, that of giving the false date of 1478 to the eclipse of 1477, and then to have confounded the two eclipses of 1477 and of 1481, because those two years had the same name, differing only by their numerical character, viz., 11 Calli and 2 Calli; but he insists that Ayopotzin was correct as to the day 1 Ollin, and that this was the true date of the eclipse of the year 1481 or 2 Calli. Every discrepancy may be reconciled by such gratuitous suppositions; but, for the reason already assigned, Gama was mistaken in his assertion that the twenty-eighth of May, 1481, O. S., coincided with the Mexican day 1 Ollin.

There is no other possible way of ascertaining with which day of the Mexican year the twenty-eighth of May, 1481, corresponded, than by ascending from the only known corre-

sponding date of the Mexican and Julian years. This known date is that of the entrance of the Spaniards into Mexico. The eighth of November corresponded with the thirteenth day of the month Quecholli; and if this was a Mexican date, Gama's calculation would be found erroneous by four days. But his opinion, that this was a Tescucan date, will be admitted as correct; and therefore that the Tescucan thirteenth day of Quecholli was in that year the sixteenth of the same month at Mexico.

	Years of 365 days.	Days.
From the 28th May, 1481, day of the eclipse, to the 28th May, 1519, there had elapsed, years .	38	
And for the leap years during that period, . .		9
From the 28th May, 1519, to 8th November, 1519, day of Cortez's first entering into Mexico, . .		164
Together, years 38 and 173 days.		

From the 16th day of the month Quecholli, year 2 Calli (1481), to the 16th day of Quecholli, year 1 Acatl (1519), the Mexican day corresponding with 8th November, 1519, there had elapsed years	38	
The Mexicans had, at the end of the cycle, year 2 Acatl (1507), intercalated days . . .		13
Therefore, from the day of the eclipse (28th May, 1481) to the 16th day of Quecholli of the same year, there must have elapsed days . . .		160
Together, years 38 and 173 days.		

The 16th of Quecholli is the	316th day of the year;
from which deducting the	160 days, as above stated,

gives for the day of the eclipse the 156th day of the year, corresponding with the Mexican day 13 Cozcaquauhtli, or one day before 1 Ollin, which is the 157th day of the year.

This error of Gama is the necessary result of that which he committed in his conversion of old into new style. The 28th of May, 1481, old style, corresponds, in fact, with the 6th instead of the 7th day of June, new style, of the same year. It shows that the Indian writer was mistaken in assign-

ing the day 1 Ollin as the date of any of the eclipses from 1476 to 1481. And it is obvious, that unless we have authentic Mexican records of some one eclipse, stating the Mexican day on which it happened, it is quite useless to calculate the day of the solar or Julian year on which it must have taken place.

The fact, that the Mexican cycle ended in the month of December, is corroborated by Torquemada, who collected a great many facts, as they were stated to him by the Indians, but did not compare and digest them. After having said in one place, that the Mexican year began on the first of February, he says, in another place, that the hour of midnight, on that night on which, at the end of the cycle, the new fire was lighted, was determined by the culmination of the Pleiads, which, as he says, happened usually (comunmente) at Mexico in the month of December. Since the old cycle terminated in that month, the first year of the new cycle must necessarily have commenced at the same time.

This culmination of the Pleiads was at best but an approximation for determining the hour of the night. Gama says that this Constellation rises on the 1st November, at Mexico, at 6^h 25′ of the evening. The night alluded to was not that of the 30th December, old style, but that of the 17th of the same month corresponding with the last of the supplementary days, and before the periodical intercalation of thirteen days. Gama, after acknowledging that the culmination of the Pleiads was but an approximation of the hour of midnight, observes that the difference between that phenomenon and midnight grows greater and greater in proportion as the day of observation is more remote from the month of November; so that it would have been of no use for the purpose alluded to, had the year begun, as others affirm, in February, March or April.

Don C. M. De Bustamente, the editor of the second edition of Gama's Work, has quoted a passage from Sahagun,

who was of opinion that the Mexican year began on the second day of February. The whole passage is as follows (Book vii., chap. 12, vol. 2d, page 265, Mex. edition):

"It must be observed that there is much discrepancy in different places, concerning the beginning of the year: in some places they told me that it commenced on a certain day of January; in others, on the 1st of February; in others, in the beginning of March. Having assembled in the Tlaltelolco, many old Indians, the most sagacious that could be found, and the ablest of the Spanish professors, they discussed the matter several days, and they all concluded by saying that the year commenced on the 2d of February."

After the destruction of almost all the ancient paintings or records, and the extermination of the priests who alone could explain them, but little confidence can be placed in the knowledge of the subject by the Indians in question. And that it was a matter of doubt, appears from the fact that they were engaged several days in discussing it. ("Se alterco esta materia por muchos dias."—Last paragraph of Sahagun's 7th Book.)

But this passage suggests a probable conjecture, viz., that the difference of opinion respecting the commencement of the year may have grown out of the fact, that the various Mexican nations, though having substantially the same calendar, did not begin the year with the same day. It has already been seen that a similar difference existed with respect to the first year of the cycle. And we have repeated instances of a similar difference, concerning the commencement of the year among the European nations, who have in other respects the same calendar. Till after the year 1752, when the Gregorian reform was adopted in Great Britain, the English began the year in March; and to this day, though the year begins nominally on the 1st of January in Russia, there is, in fact, a difference of twelve days between their 1st of January and ours.

So far as it relates to the Atzecs proper, it appears to me that we may safely conclude with Gama, that the Mexican cycle commenced on or near the 31st of December, old style, or the 9th of January, new style; and that the last of the supplementary days of the last year of the cycle nearly coincided with the winter solstice.

Length of the Year.

The question of the length of the solar year, according to the Mexicans, remains to be examined. All the authors, with the single exception of Gama, agree that the periodical intercalation at the end of every fifty-two years, consisted of thirteen days. This intercalation is for fifty-two years precisely equal to that of one day every four years in the Julian year. It proves that the Mexicans knew that the length of the year was equal to about 365 days and a quarter. It is probable, though not positively ascertained, that the other nations of the Empire of Mexico, the inhabitants of Yucatan, and those of Central America, and generally all the people belonging to this group of semi-civilized Indians, possessed the same degree of knowledge. This approximation, which differs only about twelve minutes from the actual length of the solar year, is as much as might have been expected from people no further advanced in science and knowledge than the Mexicans appear to have been. None of the other semi-civilized nations of America had gone as far. The Peruvians had a lunar year of twelve months, containing 354 days, to which the Incas, who were the temporal sovereigns and high-priests of the nation, added annually eleven days, distributed amongst the several lunar months. The Chilians appear to have received their calendar from the Peruvians. That of the Muyscas, founded also on lunar months, was still more imperfect.

Gama has suggested that the Mexicans had a much more correct knowledge of the length of the year, and that, instead

of an intercalation of thirteen days every fifty-two years, theirs was equivalent to one of twenty-five days every one hundred and four years. If so, the length of the year, as known to the Mexicans, differed but little more than two minutes from that of the true solar year.

It is evident from the preceding observations, that this theory derives no aid from the calculations of ancient eclipses, either made by Gama, or to be made hereafter. Since we have no record of the Mexican day, on which any such eclipse may have happened, it is impossible to draw any from the calculated knowledge alone of the particular time of the solar year at which it occurred. But we may go still farther.

There were two ways in which this supposed intercalation might have been made: either to intercalate alternately at the end of each cycle twelve and thirteen days, or, as Gama contends, to intercalate twelve days and a half at the end of each cycle. Supposing that he had succeeded in proving that the Mexican day 1 Ollin, had been recorded by the Mexicans as that on which the eclipse of 1481 had taken place, and that the 28th May, old style, of that year coincided with the day 1 Ollin; it would have proved that, if only twelve days instead of thirteen had been intercalated at the end of the eighth cycle, the day of the eclipse would have been the 155th day of the Mexican year, being that called 12 Quauhtli or two days before 1 Ollin, and therefore that the presumed intercalation of twelve days had not taken place at the end of the eighth cycle.

But Gama was mistaken in supposing that, if the Mexicans had intercalated thirteen instead of twelve days and a half at the end of the cycle, the eclipse of 1481 would have been found recorded one day earlier than it was. This supposed intercalation of twelve days and a half was effected, as Gama asserts, by counting the days from mid-day to mid-day, instead of, as before, from midnight to midnight. This change

could not otherwise be effected than by making the day on which the alteration took place, and which commenced at midnight, to consist only of twelve hours, by terminating on the next mid-day. All the following days would then be counted from mid-day to mid-day. Thus, in this way, the first day of the first year of the new cycle, viz., Cipactli, would terminate at mid-day of that day, instead of extending to midnight: and the same rule would apply to every other day in the year. It would necessarily follow that, if the intercalation of twelve days and a half had thus taken place, every day of the year would have had, during its first half, that is to say till mid-day, the same name (symbol) and numerical character, as if thirteen days had been intercalated; but that, from mid-day to the ensuing midnight, it would have had the name and numerical character which would have belonged to the next ensuing day, if the intercalation of thirteen days had taken place. Thus, for instance, if the intercalation was of thirteen days, the first day would have been called 1 Cipactli through the whole natural day; that is to say, not only from midnight to mid-day, but also from that mid-day to the ensuing midnight. But if the intercalation had been of twelve days and a half, the first natural day would have been designated as 1 Cipactli, only till mid-day; and thence, for the residue of that natural day, and till the next ensuing mid-day, it would have been designated as 2 *Ehecatl*, which is the name and numerical character of the day next ensuing 1 Cipactli. All the events which might happen on any one day between sunrise and mid-day, would be thus designated as having occurred on a day of the same name and numerical character, whether the intercalation had been of twelve and a half or thirteen days; whilst events which might happen in the afternoon of the same natural day, that is to say, from mid-day to midnight, would, if the intercalation was of twelve days and a half, be recorded as having occurred the day next ensuing that on which they would have been recorded, if the intercalation had

been of thirteen days. But the eclipse of 1481, on whatever Mexican day it may have happened, occurred in the morning, that is to say, between sunrise and mid-day, and, if recorded at all, would have been recorded as having occurred on the same day, whether the intercalation had been of thirteen days or of twelve days and a half. No inference whatever can therefore be drawn from the calculation of that eclipse, respecting that intercalation, or that can throw any light on the knowledge which the Mexicans may have had of the length of the year. With respect to the other eclipse, that of the year 1477, which at Mexico happened in the afternoon, so far from the Mexican day on which it occurred being stated, not a single Indian writer has even mentioned that year as one on which any eclipse whatever took place.

It has already been stated that Gama does not allude to any Indian painting, in which any eclipse had been recorded. He had not seen the Codex Vaticanus No. 3738, and the Codex Tellerianus, in which alone, of all the Mexican manuscripts heretofore published, those phenomena are inscribed. The year alone is mentioned, in no instance whatever is the day designated. And the only eclipses there recorded before the year 1496, are one in 1426, and that which is to be found in plate 119 of the Vaticanus, and in plate 15, fourth part of the Tellerianus, and is designated as having taken place in the year 10 Tecpatl (1476). This agrees with the date of one of the anonymous Indian writers, quoted by Gama ; but is a year during which it has been demonstrated, by Gama himself, that no eclipse of the sun occurred at Mexico.

From all that precedes, it is evident that Gama's calculations of eclipses do not, in any way whatever, sustain or affect his suggestion of an intercalation of twelve days and a half at the end of the cycle. This conjecture rests solely on a single passage of Acosta. After having referred to Torquemada, who says that the lighting of the new fire took place at midnight or termination of the last supplementary day, Gama

says that Acosta a contemporaneous writer of equal authority with Torquemada, states that this ceremony took place in daytime. Acosta's passage is as follows. After stating that at the end of the fifty-two years, and on the last night, they broke all their furniture, saying that the end of the world might happen at the end of the present cycle; he adds to it:

"They stood the whole night saying that perhaps there would be no more any morning, all watching with great attention in order to see whether the day would dawn again. When the day appeared they rejoiced greatly, saying that the gods had granted them another cycle. On the day which thus appeared as the beginning of another cycle, they extracted the new fire, &c.; and they all went for the new fire where the high-priest extracted it, preceded by a solemn procession in thanks (to the gods) for having granted them another morning and another cycle." *

This assertion, Gama says, shows that the extraction or lighting of the new fire took place alternately, once by day and the other by night time. He says that it is agreed by all that, since the foundation of Mexico, the new fire was lighted on a mount more than two leagues distant from the city; and that it follows, that if they set off from Mexico in a solemn and grave procession, the greater part of the morning must have been spent in that march, and that the ceremony took place in the middle of the day. Whence he concludes that they commenced to count the days of one of their cycles from the middle of the day, and those of the other from the middle of the night. And he adds that, if it had been otherwise, the Spanish conquerors and the first Christian priests who fol-

* "Y asi se estaban toda la noche, diciendo, que quiza no ameneceria mas, velando con gran atencion todos, para ver si amanecia. En viendo que venia el dia, tocaban . . . . . Instromentos de regocijo y alegria, diciendo, que ya dios les alargaba otro siglo . . . . Sacaban el dia que amanecia para principio de otro siglo, lumbre nueva, ... Yeban todos par lumbre nueva donde la sacaba el sumo sacerdote, precediendo una solemnissima procesion, en hacimiento de gracias porque les habia amanecido, y prorrogadoles otro siglo."

lowed them would have found a great difference between the Mexican years and ours, whilst in fact that difference consisted only in a few days.

I do not understand what Gama means by this last observation. For the difference of one day in 104 years, which is that between the intercalation of twelve days and a half, and that of thirteen days at the end of each cycle, could have amounted only to a few days during the four centuries, beyond which the Mexican era does not extend. But the whole argument appears to me extremely defective.

Neither Acosta nor Torquemada assert that the ceremony took place alternately every other cycle at midnight, and in the middle of the day. Torquemada states that it always took place in the middle of the night; and Acosta, that the time was always in the middle of the day. Unless we have some other evidence to the contrary, the legitimate inference from that contradictory statement is, that either the one or the other was mistaken. But we have no such evidence; no other writer but Gama has ever suggested that the ceremony took place alternately at midnight and mid-day. No other but Acosta has stated that it was in the middle of the day. The question is between Acosta and all the other writers; and as all, except Acosta, may have only followed Sahagun, let it be admitted that it lies between Acosta and Sahagun, with whose writings Torquemada was probably acquainted. Neither of them nor Gama appeals to ancient paintings recording the fact; no such painting is known to have existed subsequent to the conquest. Sahagun and Acosta derived their information in that respect from the oral reports they collected. Sahagun arrived in Mexico in 1529, eight years after the conquest, and resided there sixty years, till his death in 1590. Acosta travelled thrcugh Mexico, and published his history in 1589; he is a respectable author; but Sahagun is, for all that relates to the religious ceremonies of the Mexicans, the oldest and most authentic authority. He must have conversed with

many Indians who had been eye-witnesses of the last secular games of the year 1507, and could not be misinformed on a subject so recent and notorious. His testimony is express: "The priests left Mexico for Mount Vixchatlan after sunset, and arrived at the mount about midnight, when the ceremony of lighting the new fire took place," &c.* All the other writers, save Acosta, agree with him. The liberal and intelligent Carlos M. de Bustamente, the editor of the works of both Sahagun and Gama, laments (in a note on Gama's conjecture) that Gama should not have been acquainted with Sahagun's works, and adds, "I hold it unquestionable that the extraction of the fire took place precisely in the middle of the night, and never in the middle of the day."

Reasoning *à priori* leads to the same conclusion. After the termination of the last fatal day of the cycle, and after the sun had risen on the ensuing morning, all apprehension and anxiety was at an end. The solemn march to the mount, and any ceremony that took place there, could have been only in order to return thanks to the gods, for having granted them another period of fifty-two years before the world would come to an end. But the essential facts of that ceremony were the sacrifice of a prisoner, and lighting the new fire by friction over his corpse. This sacrifice was not an act of thanks, but made in order to appease their gods, and the ceremony of lighting the fire could have had no object after the new sun had appeared. From all the accounts given of what passed on the occasion, of the large bonfire immediately lighted on the mount in order to calm the anxiety of the

* Sahagun, book vii., ch. 9, 10, pp. 259–262, Mexican edition.—"En la vigilia de la diecha fiesta ya puesto el Sol, se aparajaban los sacerdotes . . . . . y al principio de la noche empezaban a cominar . . . . Partianse de Mexico y Hegaban a la dicha sierra cerca de media noche . . . . Venida aquelle noche . . . todos tenian muy grande mirdo, y estaban esperando con mucho temor lo que aconteveria, por que decian y tenian esta fabula ò creencia entre si, que si no se pudisse sacar lumbre, que habria fin el linage humano, y que aquella noche y aquellas tinieblas serian perpetuas, que el Sol no tornaria à nacer ò salir," &c.

people, and of the haste with which that fire was carried to every place within reach, it is certain that this lighting up a new fire by friction was, on the part of the priests, a prediction. It was thereby announced, some hours in advance, that the boon was granted, and that the sun would rise again the ensuing morning. In making that prediction the priests ran no risk; for if the world came to an end that night, it was immaterial to them that they should have been false prophets; while the accomplishment of the prophecy, of which they were pretty certain, sustained their credit with the people.* It is at all events preposterous, to suppose that this ceremony should have been, alternately every other cycle, an act of thanks and a prediction; and that the priests should have thereby acknowledged, every other generation, that they had lost the gift of prophecy. If they had in reality discovered a nearer approximation of the length of the year than 365 days and a quarter, they might have quietly corrected their calendar, but not altered the nature of their most solemn ceremony.

It is difficult to suppose that the Mexicans, at that stage of civilization in which the Europeans found them, and with the means and instruments which they possessed, could by a natural progress, and without foreign aid, have so nearly discovered the true length of the solar year. On the other hand, that knowledge, confined to a few astronomers of antiquity, had not penetrated amongst the Arabs and the Persians till the tenth and eleventh centuries. And it appears incredible that, if the astronomical knowledge of the Mexicans came from Asia at that time, this should have been imported alone, and without that of the alphabet and of various sciences and arts unknown to the Mexicans. If they in fact substituted an intercalation of twenty-five, instead of that of twenty-six days

* The process of producing actual fire by friction is not without its difficulty. We are told, that the priest charged with that office carried with him the implements necessary for the operation, and exercised himself during the march, in order that there might be no failure.

every 104 years, it must have been what may be called a lucky hit. But that which they could not have guessed, Gama, who knew within a few seconds the true length of the solar year, might see at a single glance; and this being an apparently easy process, he persuaded himself that the Mexicans had actually performed it. This hypothesis rests solely on, and cannot even be fairly inferred from a solitary passage of Acosta; and I may venture to say, that there is not the slightest foundation for that conjecture, which, admitted without investigation by La Place, may have been considered as a demonstrated truth.

In every other respect, Gama's system is the only one which is consistent with itself; and its truth is rendered highly probable by the reasons which have already been adduced. The discovery and explanation of the great Calendar Stone have thrown new light on the subject, and confirmed his views.

The Calendar Stone.

This stone was discovered in December, 1790, buried under ground in the great square of Mexico, near the place where the great temple of that city had formerly stood; and it had undoubtedly belonged to that edifice. As it now stands, it is, though somewhat mutilated in the corners, almost a perfect square, in which is inscribed a circular cylinder in relief, the edge of which is about eleven inches high, and the diameter is a little more than four Spanish varas in length. The stone itself is about four and a half varas in length and breadth, and near one vara in thickness, and is presumed to have originally weighed about thirty tons.

The hieroglyphics, with which the surface of this stone is covered, refer to the several motions of the sun, and to some of the principal Mexican feasts, which occurred from the vernal to the autumnal equinox. It is probable that there

existed another stone, corresponding with this, for the other half year; or this stone may perhaps have originally been a parallelogram, containing both portions of the year, and of which only one half remains. It has been ascertained, that it was constructed and placed in the Mexican temple, a few years before the conquest, and during the reign of the last Montezuma. It now stands in front of the cathedral of Mexico; and engraved copies of it may be found in Gama's work, and in the twenty-third plate of Humboldt's Monuments. In the copy annexed to this Essay, what appears to be the ornamental part, the hieroglyphics which have not been explained, and those which refer only to the Mexican feasts, have been omitted; and the names have been substituted for the hieroglyphics of the year and of the days of the month.

Around the principal central figure, or representation of the sun, to which we will presently revert, are delineated in a circular form the twenty days of the month. We have already adverted to the proof which is thereby afforded of the day Cipactli being the first day of the year. To this it may be added, that the representation of the sun, in the central part of the stone, is the same as in the painted *Tonalamatl*, of the period of 260 days (a painting quoted by Gama as being in his possession, but which does not appear to have been published); with the single exception, that in this it is figured without the triangle designated by the letter I; which shows, that this triangle serves in the stone to denote the beginning and first symbol of the year.

Around the circumference which surrounds the symbols of the days of the months, are found what should be fifty-two small squares, but of which only forty appear, the other twelve being covered by the four principal rays of the sun, designated by the letter R. Each of these small squares contains five small oblongs, making in all 260 for the fifty-two squares. These are presumed to represent the 260 days or the period of the twenty first series of thirteen days often alluded to.

But, for what purpose they were inserted in the stone, does not appear.

All the portion included, between the outer circumference of these 260 days and the external zone, either appears to have no meaning and to be purely ornamental, or has not been deciphered with certainty. The external zone consists, except in its extremities, of a symbol twenty times repeated, and is said by Gama to represent the Milky Way. Certain flourishes connected with it are imagined by him to represent the clouds, which were also an object of worship for the Indians; and others to represent the mountains in which the winds and clouds originated.

The whole circle is divided into eight equal parts by the eight triangles R, which designate the eight principal rays of the sun. The intervals between these are each divided into two equal parts by the small circles designated by the letter L. At the top of the vertical ray is found the hieroglyphic 13 *Acatl*, which shows that this stone applies to that year. It must be recollected that, although the Mexican calendar is in its arrangement throughout, the same for every year in the cycle, there was a variation at the rate of one day for every four years between the several years of the cycle and the corresponding solar years. It must therefore have been only for astronomical purposes, and in order to assist in pointing out what corrections were necessary in order to adjust the difference aforesaid, that the year was indicated. But why the year 13 Acatl was selected does not appear. Gama presumes that it was, on account of its being the twenty-sixth year of the cycle, and equally removed from its beginning and its termination. It was not intended to designate the year in which the stone was brought to Mexico and consecrated. For no year 13 Acatl occurred during the reign of Montezuma. We now revert to the central and principal figure.

The smaller interior circle is the image of the sun, as

usually painted by the Indians. To that image are united the four parallelograms A, B, C, D, containing respectively the hieroglyphics of the days 4 Ocelotl, 4 Ehecatl, 4 Quiahuitl, and 4 Atl. The lateral figures E and F represent, according to Gama, claws, which relate to two great astrologers, husband and wife, who were represented in the shape of eagles or owls.

This representation, according to Gama, had its origin in the Mexican fable of the suns. They believed that the sun had died four times, and that the one which now shines was the fifth, and, as already stated, was also doomed to destruction. From the first creation, the first age and the first sun lasted 676 years (thirteen cycles), when crops and food failed, and men died or were eaten by tigers. This took place in the year 1 Acatl and on the day 4 Ocelotl, when the sun died. This destruction lasted thirteen years. The second age and sun lasted 364 years (seven cycles), and ended in the year 1 Tecpatl, on the day 4 Ehecatl, when the destruction was caused by high winds and hurricanes, and some men were changed into monkeys. The third age lasted 312 years (six cycles), when in the year 1 Tecpatl, on the day 4 Quiahuitl, the destruction was caused by fire, (other authors say by earthquakes,) and men were changed into owls. The fourth age lasted 52 years, when in the year 1 Calli, on the day 4 Atl, the world was destroyed by the flood, and men were drowned or changed into fishes. The gods then created the existing fifth sun and moon. The four days of destruction, 4 Ocelotl, 4 Ehecatl, 4 Quiahuitl, and 4 Atl, are precisely those designated in the four parallelograms A, B, C, and D. It will be seen by adding the several periods together that the Indians counted 1469 years from the creation to the flood. But there is at least one incongruity in that pretended antediluvian history. If the fourth age had lasted only fifty-two years, it would have terminated in the year 1 Tecpatl instead of 1 Calli. Bustamente says that some count only three

antecedent ages, and that the present one, or fourth, is expected to end by fire. But the story of the four ages and five suns has been generally adopted, and is sustained by the paintings of the Codex Vaticanus, No. 3738, plates 7 to 10 (Humboldt's Epochs of Nature, plate 26,) the order of which is however incorrect; as it is most certain that the Mexicans ascribed the last catastrophe of the world to a flood.*

This would appear to be purely mythological; but the fact that all these imaginary antediluvian periods consist of a certain number of cycles, shows, that this fable was invented subsequent to the time when the Mexicans had attained the knowledge of cycles of years and of the approximate length of the solar year. It seems therefore highly probable that the mythological representation is in some way or another connected with celestial phenomena. And it is found accordingly that the days designated in the parallelograms A and C as 4 *Ocelotl* and 4 *Quiahuitl* correspond respectively (as will be seen by the table C, and on the assumption that the first year of the cycle corresponds with the 31st of December) with 13th of May and 17th July, old style, or 22d of May and 26th July, new style. And these two days (22d of May and 26th July), are those, according to Gama, of the transit of the sun by the zenith of the city of Mexico, which, according to Humboldt, lies in 19° 25′ 57″ N. Lat. and in 101° 25′ 20″ Lon. West from Paris. The two other days, 4 Ehecatl and 4 Atl, do not correspond, either in the first year of the cycle, or in the year 13 Acatl, with any station of the sun or any other celestial phenomenon.

Three other hieroglyphics contained within the interior circumference, or representation of the sun, which indicate

* There is, however, a great diversity of opinion respecting the duration of each of the ages. It will be seen in the Appendix, that the hieroglyphics, annexed to the said paintings, may be interpreted as giving to the four ages respectively the duration of either 682, 530, 576, and 528; or of 5206, 2010, 4404, and 4008 years.

the dates of two celebrated feasts of the Mexicans, are omitted in the annexed plate.

The three following indications, or hieroglyphics, are found immediately below the figure proper of the sun. The first of these (designated by the letter H) is placed between the parallelograms C and D, and consists of two squares of five oblongs each, indicating the numerical character 10. The hieroglyphic of the day is not annexed; but the whole of the central figure is itself the sign Ollin Tonatiah; and the hieroglyphic of the day Ollin, as delineated on the stone, amongst the other hieroglyphics of the days, is on a small scale an abbreviated form of that central and principal figure of the stone. The day designated here is therefore 10 Ollin. Below this, and on each side respectively of the great vertical ray of the sun, are found the hieroglyphics of the days 1 Quiahuitl (designated by the letter N), and 2 Ozomatli (designated by the letter M).

Of these last mentioned days, 10 Ollin corresponds in the first year of the cycle, as may be seen by table C, with the 22d day of September, new style; 1 Quiahuitl with the 28th of March, and 2 Ozomatli with the 28th of June. But the Mexican year, as compared with the solar year, had in the year 13 Acatl lost six days; and therefore in that year, 1 Quiahuitl corresponded with the 22d of March, and 2 Ozomatli with the 22d of June.

We have therefore delineated on this stone the dates of the five principal positions of the sun, from the vernal to the autumnal equinox. Three of these—the two transits of the sun by the zenith (22d of May and 26th of July), and the autumnal equinox (22d of September), are the Mexican days on which those phenomena occurred in the first year of the cycle (1 Tochtli). And the two others, the vernal equinox (22d of March), and the summer solstice (22d of June), are the Mexican days on which these two phenomena occurred in the year 13 Acatl. These dates are not founded on con-

jectures, nor derived from Indian paintings no longer to be found, or of a date subsequent to the conquest, or from the uncertain indications given by the Indian writers who wrote with our alphabet, either in the Spanish or Mexican language. They are positive facts, engraved by the Indian priests before the conquest, on a stone monument of indubitable authenticity.

It may not be possible to give a conclusive explanation of the reason, why some of the dates are given for the first year, and others for the twenty-sixth year of the cycle; nor, indeed, as has already been stated, can we very well account for the selection of that twenty-sixth year (13 Acatl). I have not been able to discover, in Gama's work, any satisfactory explanation of the principal difficulty; why some of the dates apply to the year 1 Tochtli, and others to the year 13 Acatl. It seems to me not improbable, that the general representation of the sun and of its several motions, partly mythological, partly astronomical, was originally made for the first year of the cycle; and that having been represented in their ritual calendars and public paintings, the priests could not alter it. And it will be perceived that these three dates under the letters A, C, H, which are those in conformity with the first year of the cycle, belonged to the body of the internal figure; whilst the two others N, M, which refer to the year 13 Acatl, are placed in a vacant space between the sign H (10 Ollin), and the circumference which separates the internal figure from the signs of the twenty days of the month. Why the priests found it convenient to introduce at all the year 13 Acatl cannot be well explained. But it is a fact that they did do it; and having done so, they introduced the two dates not included in the original figure, but corrected so as to correspond with that year. It seems to me that, in that mixture of mythological inventions and astronomical truths, as well as in that of dates, some belonging to the first and others to the twenty-sixth year of the cycle, may be perceived the intention of the priests, to reserve to themselves, and to the small

number initiated, the knowledge they had acquired; whilst in those public monuments, which, like the stone in question, were open to all, that knowledge was communicated but partially, and under forms unintelligible to the mass of the people.

The inferences which may be drawn from this authentic monument refer either to the astronomical knowledge of the Mexicans, or to the adjustment of their calendar.

It appears that they had ascertained with considerable precision the respective days of the two passages of the sun by the zenith of Mexico, of the two equinoxes, and of the summer solstice. There can be no doubt that they were equally well acquainted with the date of the winter solstice, and that the only reason why it is not inscribed on the stone is because this embraces only the period from the vernal to the autumnal equinox. They had, therefore, six different means of ascertaining and verifying the length of the solar year, by counting the number of days elapsed till the sun returned to each of these six points, the two solstices, the two equinoxes, and the two passages by the zenith. It may also be observed, that according to the dates above stated, 184 days elapsed between the 22d of March, the date assigned to by them to the vernal equinox, and the 22d of September, their date for the autumnal equinox; leaving only 181 days for the period between the autumnal and vernal equinox. Although this is not strictly correct, yet it shows that they had ascertained by observation, that the sun remained longer north than south of the equator; which is true, since its apparent motion is not uniform, and is accelerated during the time it appears south of the equator. Another remarkable fact is, that the two dates inscribed in the body of the central figure, and corresponding with the first year of the cycle, are those of the two passages of the sun by the zenith of Mexico. The observations which led to the discovery of their dates must have been made at Mexico itself, or in its vicinity. They

appear therefore to be of American origin. They could not have been made by any nation living north of the tropic. Neither the Atzecs or the Toltecs, if they came from the northern parts of Asia, could have brought with them even the notion of this celestial phenomenon. If the knowledge of its existence was imported from Asia, it must have been from those parts which lie south of the northern tropic. Whether this knowledge was the result of the observations of the Atzecs, subsequent to their settling at Mexico, or of their predecessors, the Toltecs, at some place not far distant from that city, is a matter of conjecture.

Every date inserted on the Calendar Stone refers to the period from the vernal to the autumnal equinox; and the days assigned to them are respectively the 22d of March and the 22d of September. The date of the winter solstice, not being included within that period, does not appear on the stone. The date assigned to the summer solstice corresponds with our 22d of June; and that which they must have ascribed to the winter solstice must have corresponded with our 22d of December, or very near it. We have already seen, that the first year of their cycle corresponded with our 31st of December, O. S., or 9th of January, N. S. This last date was separated, by the thirteen intercalated days, from the termination of the last year of the preceding cycle; and our 22d day of December must therefore have corresponded with the first supplementary day of that last year. We may see there the connection, between the supersitious belief of the threatened destruction of the world, and the winter solstice, the time when the sun had receded farthest from them; and it might be apprehended that he would not again return towards them. It may be observed that, if any reliance can be placed on the Atzec era of the year 1091, the difference of three days, during a period of 416 years, between the true solar year and that of the year of 365 days and a quarter, would have made the day of the winter solstice to correspond, at the time

ascribed to the reformation of the calendar, with the fourth supplementary day, so as to make the fifth of those days that on which the destruction of the world was actually apprehended. Setting aside that conjecture, it is sufficient for our purpose to have shown that there is the highest probability that the Mexican cycle terminated on a day nearly corresponding with that of the winter solstice.

Reverting to the calendar, it must be recollected that it is by recurring to the table C, that we have ascertained the correspondence of the days inscribed on the stone with those of the solar year, according to our calendar. This table is made without any reference whatever to the inscriptions on the stone, and in strict conformity with Gama's system, which is founded on the following principles: that the day 1 Cipactli is the first day of every month and of every year of the cycle; that the month Tititl is the first month of every year; that the first day of the first year of the Mexican cycle corresponded, at the time of the conquest, with the 31st day of December, old style, or 9th of January, new style; that an intercalation equivalent to our bissextile year had been adopted by the Mexicans; and that this intercalation, instead of being made once every four years, consisted of thirteen days intercalated at the end of the cycle; whence it followed that the Mexican year, as compared with ours, receded by one day every four years till the defect was supplied by the above mentioned intercalation of thirteen days. It is only by assuming all these principles, that the five above stated days inscribed on the stone are found to correspond with the dates of the five principal phenomena of the position of the sun during the six months that it appears north of the equator. And as it is incredible, according to the acknowledged laws of probabilities, that this extraordinary concidence should be the result of accident, it affords, as it seems to me, a conclusive proof of the correctness of Gama's system.

Yucatan Calendar.

Our knowledge of the Yucatan Calendar is derived exclusively from the communications made by Don J. P. Perez to Mr. John L. Stephens, and inserted in the appendix to the first volume of this gentleman's Travels in Yucatan. It is substantially the same with that of the Mexicans, though differing in some important particulars.

The inhabitants of Yucatan had, like the Mexicans, the two distinct modes of computing time, by months of twenty days, and by periods of thirteen days. They also distinguished the days of the year by a combination of those two series, precisely similar to that of the Mexicans. And their year likewise consisted of 365 days, viz., of eighteen months of twenty days each, to which they added five supplementary days; and also of a corresponding series of twenty-eight periods of thirteen days each, and one day over. The following Table exhibits the names of the twenty days of the Yucatan month, with their signification, as far as it has been ascertained by Don J. P. Perez; and also the days of the Chiapa month as given by Boturini; and which, from the similarity of the names of several of the days, appears to have been in its origin nearly identical with that of Yucatan.

	Yucatan.		Chiapa.	Mechoacan	Nicaragua.	Mexican.
1	KAN	yellow	Ghanan	Inodon	9 Cipat	Cipactli
2	Chickhan	small	Abagh	Inic Ebi	10 Acat	Ehecatl
3	Quimi	death	Tox	Inettuni	11 Cali	Calli
4	Manik	wind ceasing	Moxic	Inbeari	12 Quespalcoat	Cuetzpalin
5	Lamat		Lambat	Inethaati	13 Migiste	Cohuatl
6	Muluc	union?	Mulu	Inbani	14 Macat	Miquiztli
7	Oc	palm of hand?	Elab	Inxichari	15 Toste	Mazatl
8	Chuen	board	Batz	Inchini	16 At	Tochtli
9	Eb	ladder	Enob	In Rini	17 Izquindi	Atl
10	Be-en		Be-en	In Pari	18 Ocomat	Itzcuintli
11	HIX	rough	Hix	Inchon	19 Malinal	Ozomatli
12	Men	a mechanic	Tziquin	Inthahui	20 Acato	Malinalli
13	Quib	wax	Chabin	Intzini	1 Agat	Acatl
14	Caban		Chic	In Tzoniabi	2 Ocelot	Ocelotl
15	Eznab		Chinax	In Tzimbi	3 Oat	Quauhtli
16	Ca-uac		Cahogh	Inthihui	4 Cozgacoatz	Cozcaquauhtli
17	Ajau	period of years	Aghual	Inixotzini	5 Olin	Ollin
18	Imix	maize?	Mox	Inichini	6 Topecat	Tecpatl
19	Yk	wind	Ygh	Ini Abi	7 Quiauvit	Quiahuitl
20	Akbal		Votan	Intaniri	8 Sochit	Xochitl

The Calendar of the inhabitants of the independent kingdom of Mechoacan, who spoke the Tarasca language, appears to have been similar to that of the Mexicans; and the names of the days of their month as stated by Veytia, are inserted in the Table. The names of the days of an ancient Mexican, or rather Toltec tribe, found in the province of Nicaragua, have also been inserted. This, as far as we know, is the extreme southeastern limit of the Mexican Calendar on the Pacific Ocean. That limit on the Atlantic or Gulf of Mexico may be traced as far as the islands opposite Cape Honduras (Herrera); beyond which the shores are still inhabited by the uncivilized Musquito Indians.

The cycle of fifty-two years was also adopted in Yucatan, and the arrangement of the years was precisely the same as in that of Mexico, substituting only the names Khan, Muluc, Hix and Ca-uac, for Tochtli, Acatl, Tecpatl and Calli, as appears in the following Table:

	Yucatan Cycle of 52 Years.				
	1st year.	14th year.	27th year.	40th year.	
1	Khan	Muluc	Hix	Ca-uac	Chiapa Cycle is also similar, substituting for the names Khan, Muluc, Hix, Ca-uac, those of Votan, Lembat, Be-en, Chinax.
2	Muluc	Hix	Ca-uac	Khan	
3	Hix	Ca-uac	Khan	Muluc	
4	Ca-uac	Khan	Muluc	Hix	
5	Khan	Muluc	Hix	Ca-uac	
6	Muluc	Hix	Ca-uac	Khan	
7	Hix	Ca-uac	Khan	Muluc	
8	Ca-uac	Khan	Muluc	Hix	
9	Kahn	Muluc	Hix	Ca-uac	
10	Muluc	Hix	Ca-uac	Khan	
11	Hix	Ca-uac	Khan	Muluc	
12	Ca-uac	Khan	Muluc	Hix	
13	Khan	Muluc	Hix	Ca-uac	

But there was an essential difference respecting the series of the names and numerical characters of the days, as will appear by the following table, which shows the termination of the first year of the cycle, and the beginning of the next ensuing years.

Year 1 Khan	1st day of the year	1 Khan
1st of the Cycle	1st supplementary day	10 do.
	2d do.	11 Chickan
	3d do.	12 Kimi
	4th do.	13 Manic
	5th do.	1 Lamat
Year 2 Muluc	1st day of the year	2 Muluc
2d of the Cycle	1st supplementary day	11 Muluc
	Last do.	2 Be-en
Year 3 Hix	1st day of the year	3 Hix
3d of the Cycle	1st supplementary day	12 do.
	Last do.	3 Edznab
Year 4 Ca-uac	1st day of the year	4 Ca-uac
4th of the Cycle	1st supplementary day	13 do.
	Last do.	4 Akbal
Year 5 Khan	1st day of the year	5 Khan
5th of the Cycle	1st supplementary day	1 do.
	Last do.	5 Lamat

Don J. P. Perez positively states, that the fundamental rule is never to interrupt either of the series of names or of days. Thus, inasmuch as the last supplementary day of the first year of the cycle (1 Khan) is 1 Lamat; and as, in the order of the days of the month, the day called "Muluc" immediately follows the day Lamat; the ensuing year 2 Muluc commences with the day 2 Muluc, in the same manner as the year 1 Khan commences with the day 1 Khan. It is the same with the other years; so that the first day of every year has the same name and numerical character as the year itself.

Don J. P. Perez acknowledges that amongst the few mutilated remains of Indian manuscripts or paintings, he has not been able to discover any trace of an intercalation, either of one day every four years, or of thirteen days at the end of the cycle, though he presumes that they had indubitably either the one or the other.

The Yucatan cycle of fifty-two years, differed in no other respect from that of the Mexicans. The combination of the two series of twenty and thirteen days is used in the same manner in both calendars for the purpose of distinguishing the days of the year. The table C, substituting the Yucatan for the Mexican names of days, is equally applicable to the Mexican year, and to the first year of the Yucatan cycle.* Don J. P. Perez alludes specially to the horizontal series 1, 8, 2, 9, &c. He gives the rule for forming it, and says that the Indians called it in the Maya language *buk xoc*, meaning, "general account." It seems that they committed it to memory for the purpose of finding out at all times the day of the year. But no mention is made of the series of nine night companions, or of any substitute; and the days of the five last cannot therefore be distinguished from those of the five first months.

The Yucatecs differed materially from the Mexicans with regard to the time of the solar year, when their year began. Don J. P. Perez informs us, that the first day of the Yucatan year corresponded with the sixteenth day of July; and that this was the day of the transit of the sun by the zenith of a place which he does not mention. But he adds that, for want of proper instruments, the Indians had made a mistake of forty-eight hours. In point of fact, it is in the latitude of about 21 degrees and a half that the transit of the sun by the zenith occurs on the 16th of July; and Yucatan lies between the latitudes of about 18 degrees and a half and 21 degrees and a half. To commence the year on the day of the transit of the sun by the zenith, is attended with the great inconvenience, that this commencement must vary from place to place, according to their respective latitudes. As Don J. Pio Perez counts every year as having 365 days, and without regard to the omitted bissextile days, it is clear that the day in the Yucatan calendar, on which the transit of the sun by the zenith of any one place occurs, would vary twenty days, or a

whole Indian month, in the course of eighty years. This would create such confusion that, if it be a well ascertained fact, that the Yucatan year began on the zenith day, this renders it highly probable that the calendar was, like that of the Mexicans, corrected by an intercalation of thirteen days at the end of the cycle.

The names of the eighteen months of the Yucatecs, together with such interpretations as Don Pio Perez has given us, their order and their correspondence with our year, new style, appear in the following table:

1	Pop, Poop	Mat of Reeds	begins on 16	July, N. S.
2	Uo	Frog	" 5	August
3	Zip	Tree	" 25	"
4	Zodz	Bat	" 14	September
5	Zec		" 4	October
6	Xul	End	" 24	"
7	Dzeyaxkin	Summer	" 13	November
8	Mol	To unite	" 3	December
9	Chen	A Well	" 23	"
10	Yax	First	" 12	January
11	Zac	White	" 1	February
12	Quej	Deer	" 21	"
13	Mac	Lid, cover	" 13	March
14	Kankin	Yellow Sun	" 2	April
15	Moan		" 22	"
16	Pax	Musical instrument	" 12	May
17	Kayab	Song	" 1	June
18	Cumku	Noise	" 21	"
	Uayebhaab	Bed of year	the 5 supplementary days	
	Xma kaba kit	Days without name	from 11th to 15th	July

Don J. P. Perez observes that "The translation of the names of the months and days is not as easy as it would appear, because some are not at present in use, and others again, from the different meanings attached to them, and from the want of their true pronunciation, cannot be correctly understood; however, be this as it may, I shall endeavor to decipher them as nearly as possible, and according to the present state of the language." That gentleman repeatedly acknow-

ledges and laments the want of ancient authentic Indian paintings and documents, and he may in some respects have drawn erroneous inferences. I would, with great personal respect and deference to his opinion, suggest a further investigation respecting the beginning of the year. May not the name of the month *Chen* or *Dchen*, which begins 23d December, new style, be derived from the Maya verb, meaning "to stay," "to stop"? The name of the next ensuing month, *Yax*, means "first;" and it begins on the 12th of January, nearly the same day on which the Mexican year begins.

The Mexicans counted only by cycles; they designated the termination of a cycle by a hieroglyphic representing a bundle of reeds tied up; and they sometimes designated, by an equal number of small circles, the number of cycles which had elapsed, since the beginning of their era corresponding with the year 1091. But the Yucatecs, besides their cycle of 52 years, had another, containing thirteen periods of twenty or twenty-four years each. These last mentioned periods were called *Ajau* or *Ahau*. Beltran, in his Grammar of the Maya language (page 142), says that the word *Ahau* is used in counting, or means a period of twenty years in the calendars of the Yucatecs, and that their great cycle consisted of thirteen Ahaus, and contained two hundred and sixty years. But Don J. P. Perez affirms, and appears to have demonstrated, that each Ajau consisted of twenty-four years, and that the great cycle was of three hundred and twelve years, or equal to six of the cycles of fifty-two years. Each Ajau is distinguished by its number, from one to thirteen, but the order in which they follow each other is singular, viz., 13, 11, 9, 7, 5, 3, 1, 12, 10, 8, 6, 4, 2.

The name *Ajau* is that of the 17th day of the month, and follows immediately the day called *Ca-uac;* which last name is also that of one of the years. Since the first day of every year has the same name and numerical character as the year itself, the first days of the years 1 *Ca-uac*, 2 *Ca-uac*, 3

Ca-uac, &c., are always designated in the same manner, viz., 1 *Ca-uac*, 2 *Ca-uac*, 3 *Ca-uac*, &c. It follows that the day *Ajau* is always the second day of every year called *Ca-uac*, and has for its numerical character the number next following that of the year, which last is the same as that of the first day of the year. The name *Ajau*, given to the periods above stated, is derived from the name of the day *Ajau*, and bears the same number as the second day of the year to which it refers. The great period of thirteen Ajaus commences, as has been stated, by the number "thirteen," and therefore on the second of the year 12 *Ca-uac*. Years of the same name recur every fourth year in the cycle. Whether the period *Ajau* consists of twenty or twenty-four years, every one must therefore commence in one of the years which have the name of *Ca-uac*. And it is clear that the years *Ca-uac*, recurring every fourth year, and commencing with the number 12, they must successively recur in the following order, viz., 12, 3, 7, 11, 2, 6, 10, 1, 5, 9, 13, 4, 8; and that the corresponding day *Ajau* must respectively bear the numbers next following, to wit, 13, 4, 8, 12, &c., to 9.

1st Cycle		2d Cycle.		3d Cycle.		4th Cycle.		5th Cycle.		6th Cycle.	
12	*13	12	13	12	13	12	13	12	13	12	13
3	4	3	4	3	4	3	4	3	4	3	*4
7	4	8	8	7	8	7	8	7	*8	7	8
11	12	11	12	11	12	11	*12	11	12	11	12
2	3	2	3	2	*3	2	3	2	3	2	3
6	7	6	*7	6	7	6	7	6	7	6	7
10	*11	10	11	10	11	10	11	10	11	10	11
1	2	1	2	1	2	1	2	1	2	1	*2
5	6	5	6	5	6	5	6	5	*6	5	6
9	10	9	10	9	10	9	*10	9	10	9	10
13	1	13	1	13	*1	13	1	13	1	13	1
4	5	4	*5	4	5	4	5	4	5	4	5
8	*9	8	9	8	9	8	9	8	9	8	9
Next Cycle commences again with								12	13		

The preceding table exhibits the numbers of the several years *Ca-uac*, and those of the corresponding days *Ajau*, during six consecutive cycles. It must be remembered that the number of the year is also that of the first day of the year.

Divided into periods or Ajaus of twenty-four years each, each of these will respectively commence with, and bear the number of the days *Ajau*, which are in the table marked with an asterisk, and therefore in the following order, viz., 13, 11, 9, 7, 5, 3, 1, 12, 10, 8, 6, 4, 2. This is precisely the series above stated, according to which the several Ajaus do actually follow each other. This therefore demonstrates that Don J. P. Perez is correct, in asserting that each of these periods contained twenty-four years; and that the great cycle of thirteen Ajaus consisted of 312 years or six cycles. Had that great cycle consisted of only 260, and each of the Ajaus of only twenty years, the Ajaus would have followed each other in the following order, viz., 13, 7, 1, 8, 2, 9, 3, 10, 4, 11, 5, 12, 6.

That the Ajaus did actually follow each other in the order above stated, (13, 11, 9, &c.,) is fully confirmed by the Maya manuscript, which, with its English translation, is inserted in the Appendix to the second volume of Mr. Stephens's Travels in Yucatan. And yet the author of that manuscript makes each Ajau equal to only twenty years.

Although the great cycle, or age, of 312 years, is equal to six cycles of fifty-two years each, yet, since the great cycle and every one of its Ajaus begin in a year *Ca-uac*, and the cycle of fifty-two years always begins with the year 1 *Khan*, the commencement of this shorter cycle never coincides with the commencement of either the great cycle or any of its Ajaus.

In order to ascertain the coincidence, either of the great or of the short cycle with our years, it would be necessary to have the date of some event during, or subsequent to the conquest, according to both our calendar and that of Yucatan.

No such date has been communicated by Don J. P. Perez. But he states that, from a well ascertained comparison of dates, it is certain that the first year of the great cycle, during which the conquest was made, coincides with our year 1488. The following table exhibits the coincidence of the three first Ajaus of that cycle, and of the thirteen preceding Ajaus, or of the preceding great cycle, with our years.

Great Cycle preceding that of the Conquest.					Year of our Lord.
The 13th	Ajau	begins in the year	12	Ca-uac	1176
11th	"	"	10	"	1200
9th	"	"	8	"	1224
7th	"	"	6	"	1248
5th	"	"	4	"	1272
3d	"	"	2	"	1296
1st	"	"	13	"	1320
12th	"	"	11	"	1344
10th	"	"	9	"	1368
8th	"	"	7	"	1392
6th	"	"	5	"	1416
4th	"	"	3	"	1440
2d	"	"	1	"	1464
Next ensuing Great Cycle.					
The 13th	Ajau	begins in the year	12	Ca-uac	1448
11th	"	"	10	"	1512
9th	"	"	8	"	1536
7th	"	"	6	"	1560

It appears by the Indian manuscript inserted in the appendix to the second volume of Mr. Stephens's Travels in Yucatan, that the Indians generally designated their dates and distinguished the years, in reference to the great cycle of 312 years; sometimes in reference to the cycle of fifty-two years; and occasionally in reference to both. But the dates given in that manuscript are so confused, and sometimes contradictory, that it is impossible, unless we suppose the translation to be incorrect, to draw any consistent inferences from most of them.

Don J. P. Perez has analyzed that of the death of a certain Ajpula, in the appendix to the first volume of Mr. Stephens's Travels, page 443. It is said that he died in the sixth year of the thirteenth Ajau, in the year 4 *Khan* (when the first day of the year was also 4 Khan *at the east end of the wheel*), on the day of 9 *Ymix*, the 18th day of the month *Zip*, which is the third month of the year.

The thirteenth Ajau begins in the year 12 Ca-uac; and counting from this, the sixth year is 4 *Kan*. Therefore it was superfluous to designate the year as being both the sixth year of the thirteenth Ajau and the year 4 *Kan*. Either designation would have been sufficient to indicate the year. The day of the year is designated as being 9 *Ymix*, and the 18th of the month *Zip*. Either of these two designations would also have been sufficient. The day *Ymix* is always the eighteenth day of every month. In the year 4 *Kan*, the first day of the first month is also 4 *Kan*; and the eighteenth day of that month will therefore be 8 *Ymix*. And on account of the regular horizontal series 1, 8, 2, 9, 3, &c., if 8 *Ymix* is the eighteenth day of the first month, 9 *Ymix* will be the eighteenth day of the third month. Therefore, after having designated the year as being the year 4 *Kan*, to designate the day as being 9 *Ymix*. and the eighteenth day of the third month, was to repeat twice the same thing.

The whole date might have been expressed several ways, but the designation of the proper Ajau was always necessary. It would have been expressed with perfect precision, so as not to be confounded with any other day or year of the whole cycle of 312 years, in either of the following ways: 13 *Ajau*, year 4 *Kan*, day 9 *Ymix*; or, sixth year of 13th *Ajau*, 18th day of month *Zip*. But the agreement between those two different ways of designating the date, shows that the arrangement of Ajaus, years, months and days, as stated by Don J. P. Perez, is correct.

The sixth year of the thirteenth Ajau corresponds with the year 1494. But in the translation of the Indian manuscript, it is said that six years were wanting to the completion of the thirteen Ajau, when Ajpula died; in which case the year would have begun on the third instead of the fourth Kan; and that year would have corresponded with our year 1506. The year 1536 given in the manuscript is evidently a mistake of the transcriber. I cannot account for those contradictions, but I suspect some mistake in the translation.

Languages . . . MAYA. Countries . . . YUCATAN.			
1	Hun	. .	Na, Ra
2	Ca	. .	Yo ho
3	Ox	. .	Hi u
4	Can	. .	Goo ho
5	Ho	. .	Cy tta
6	Uac	. .	Ra-to
7	Uuc	. .	Yo-to
8	Uaxac	. .	Hia-to
9	Bolon	. .	Cy-to
10	LAHUN	. .	Ra-TTA
11	Buluc	. .	Ra-tto-m'a-na
12	Lah-ca	10+2	Ra-tta-m'a-yo
13	Ox-lahun	3+10	Ratta-m'a-hiu
14	Can-lahun	4+10	Ratta-m'a-goo
15	Ho-lahun	5+10	Ratta-m'a-cytt
16	Uac-lahun	6+10	Ratta-m'a-rato
17	Uuc-lahun	7+10	Ratta-m'a-yoto
18	Uaxac-lahun	8+10	Ratta-m'a-hiato
19	Bolon-lahun	9+10	Ratta-m'a-gyto
20	Hun-KAL	1×20	Na-TE
30	Lahu-Ca-Kal	−10+2×10	Na-te-m'a-ratta
40	Ca-Kal	2×20	Yo-te
50	Lahu-y-Ox-Kal	−10+3×20	Yote-m'a-ratta
60	Ox-Kal	3×20	Hiu-te
70	Lahu-Can-Kal	−10+4×20	Hiute-m'a-ratta
80	Can-Kal	4×20	Gooho-rate; gy
90	Lahu-y-Ho-Kal	−10+5×20	Gooho-rate-m'a
100	Ho-Kal	5×20	Cytta-te
200	Lahun-Kal	10×20	Na-NTHEBE
300	Ho-lhu-Kal	(5+10)×20	Yo-nthebe
400	Hun-BAK	1×400	Hiu-nthebe
500	Ho-tu-Bak	. .	Gooho-nthebe
600	Lahu-tu-Bak	. .	Cytta-nthebe
700	Holhu-tu-Bak	. .	Rato-nthebe
800	Ca-Bak	2×400	Yotto-nthebe
1000	Lahu-y-Ox-Bak	. .	Hiato-nthebe Gatta-nthebe Na-MAO
1200	Ox-Bak	3×400	
8000	Hun-PIC	1×8000	
160000	CALAB (Beltran, p. 129)		

TABLE C.

MEXICAN ALMANAC, ACCORDING TO GAMA.

and as these names are the same and in the same order in every month, the column in which they are set down answers for every month. The series of 13 days, designated by its proper numeral from 1 to 13. And the series of the 9 night companions, designated in this Table by the letters a, b, ... h, i, viz.:

e. Miquiztli.
f. Atl.
g. Tlazolteotl.
h. Tepeyolotli.
i. Quiahuitl.

Thus every day in the year is so distinguished that it never can be confounded with any other. The day 4 Ollin is the 17th day of both the first and the fourteenth month; but in the first instance it is distinguished by the letter *h*, and in the second by the letter *g*. If the characteristics of the 9th day of the 10th month be required, the Table shows that it is 7 *Atl i;* and thus also the 13th day of the 16th month (Quecholli) is shown to be 1 *Acatl g*, and the 313th of the year.

But it is only for the first year of the cycle (1 Tochtli) that the Mexican year corresponds with ours in the manner stated in the Table. For, on account of our intercalation of one day every bissextile year, the Mexican year receded, as compared with ours, one day every four years. This correction must therefore be made, whenever a comparison of the dates is wanted for any other than the first years of the cycle. The Mexican intercalation of 13 days at the end of the cycle of 52 years made again the first year of every cycle correspond with our year, in the manner stated in the Table.

Another correction is again necessary, when we have a Tescucan instead of a Mexican date. For the first year of the Mexican cycle was 1 Tochtli, and that of Tescuco was 1 Acatl; which caused a difference now of three, now of ten days in their calendars, which in every other respect were the same. Both corrections appear in the second Table (C²).

	year.			Mexico.	Tescuco.	Mexico.	Tescuco.
1st year of Mexican Cycle	1 Tochtli	1454	Dec.	31	Dec. 21	Jan. 9	Dec. 30
Bissextile year	3 Tecpatl	1456		30	20	8	29
do.	7 do.	1460		29	19	7	28
do.	11 do.	1464		28	18	6	27
Tescucan interc'n 13 days.							
1st year of Tescucan Cycle	1 Acatl	1467		28	31	6	Jan. 9
Bissextile year	2 Tecpatl	1468		27	30	5	8
do.	6 do.	1472		26	29	4	7
do.	10 do.	1476		25	28	3	6
do.	1 do.	1480		24	27	2	5
do.	5 do.	1484		23	26	1	4
do.	9 do.	1488		22	25	Dec. 31	3
do.	13 do.	1492		21	24	30	2
do.	4 do.	1496		20	23	29	1
do.	8 do.	1500		19	22	28	Dec. 31
do.	12 do.	1504		18	21	27	30
Mexican intercal. 13 days.							
1st year of Mexican Cycle	1 Tochtli	1506		31	21	Jan. 9	30
Bissextile year	3 Tecpatl	1508		30	20	8	29
do.	7 do.	1512		29	19	7	28
do.	11 do.	1516		28	18	6	27
Tescucan interc'n 13 days.							
1st year Tescucan Cycle / Cortes enters Mexico	1 Acatl	1519		28	31	6	Jan. 9
Bissextile year	2 Tecpatl	1520		27	30	5	8
Capture of Mexico	3 Calli	1521		27	30	5	8

TA . A .

IE F

Languages . . . MAYA. Countries . . . YUCATAN.				
1	Hun	. .	Na, Ra	.
2	Ca	. .	Yo ho	.
3	Ox	. .	Hi u	.
4	Can	. .	Goo ho	.
5	Ho	. .	Cy tta	.
6	Uac	. .	Ra-to	1+
7	Uuc	. .	Yo-to	2+
8	Uaxac	. .	Hia-to	3+
9	Bolon	. .	Cy-to	.
10	LAHUN	. .	Ra-TTA	1×
11	Buluc	. .	Ra-tto-m'a-nt	10
12	Lah-ca	10+2	Ra-tta-m'a-yc	10
13	Ox-lahun	3+10	Ratta-m'a-hiu	10
14	Can-lahun	4+10	Ratta-m'a-goc	10
15	Ho-lahun	5+10	Ratta-m'a-cyt	10
16	Uac-lahun	6+10	Ratta-m'a-rato	10
17	Uuc-lahun	7+10	Ratta-m'a-yot	10
18	Uaxac-lahun	8+10	Ratta-m'a-hiat	10
19	Bolon-lahun	9+10	Ratta-m'a-gyt	10
20	Hun-KAL	1×20	Na-TE	1×
30	Lahu-Ca-Kal	−10+2×10	Na-te-m'a-ratt	1×
40	Ca-Kal	2×20	Yo-te	2×
50	Lahu-y-Ox-Kal	−10+3×20	Yote-m'a-ratta	2×
60	Ox-Kal	3×20	Hiu-te	3×
70	Lahu-Can-Kal	−10+4×20	Hiute-m'a-ratt	3×
80	Can-Kal	4×20	Gooho-rate ; g	4×
90	Lahu-y-Ho-Kal	−10+5×20	Gooho-rate-m'a	4×
100	Ho-Kal	5×20	Cytta-te	5×
			Na-NTHEBE	100
200	Lahun-Kal	10×20	Yo-nthebe	2×
300	Ho-lhu-Kal	(5+10)×20	Hiu-nthebe	3×
400	Hun-BAK	1×400	Gooho-nthebe	4×1
500	Ho-tu-Bak	. .	Cytta-nthebe	5×1
600	Lahu-tu-Bak	. .	Rato-nthebe	6×1
700	Holhu-tu-Bak	. .	Yotto-nthebe	7×1
800	Ca-Bak	2×400	Hiato-nthebe	8×1
1000	Lahu-y-Ox-Bak	. .	Gatta-nthebe	10×
			Na-MAO	1×1
1200	Ox-Bak	3×400		
8000	Hun-PIC	1×8000		
160000	CALAB (Beltran, p. 129)			

TABLE C.

MEXICAN ALMANAC, ACCORDING TO GAMA.

and as these names are the same and in the same order in every month, the column in which they are set down answers for every month. The series of 13 days, designated by its proper numeral from 1 to 13. And the series of the 9 night companions, designated in this Table by the letters a, b, ... h, i, viz.:

e. Miquiztli.
f. Atl.
g. Tlazolteotl.
h. Tepeyolotli.
i. Quiahuitl.

Thus every day in the year is so distinguished that it never can be confounded with any other. The day 4 Ollin is the 17th day of both the first and the fourteenth month; but in the first instance it is distinguished by the letter *h*, and in the second by the letter *g*. If the characteristics of the 9th day of the 10th month be required, the Table shows that it is 7 *Atl i*; and thus also the 13th day of the 16th month (Quecholli) is shown to be 1 *Acatl g*, and the 313th of the year.

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do.	10 do.	1476		25	28	3	6
do.	1 do.	1480		24	27	2	5
do.	5 do.	1484		23	26	1	4
do.	9 do.	1488		22	25	Dec. 31	3
do.	13 do.	1492		21	24	30	2
do.	4 do.	1496		20	23	29	1
do.	8 do.	1500		19	22	28	Dec. 31
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1st year of Mexican Cycle	1 Tochtli	1506		31	21	Jan. 9	30
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Bissextile year	2 Tecpatl	1520		27	30	5	8
Capture of Mexico	3 Calli	1521		27	30	5	8

THE CALENDAR STONE.

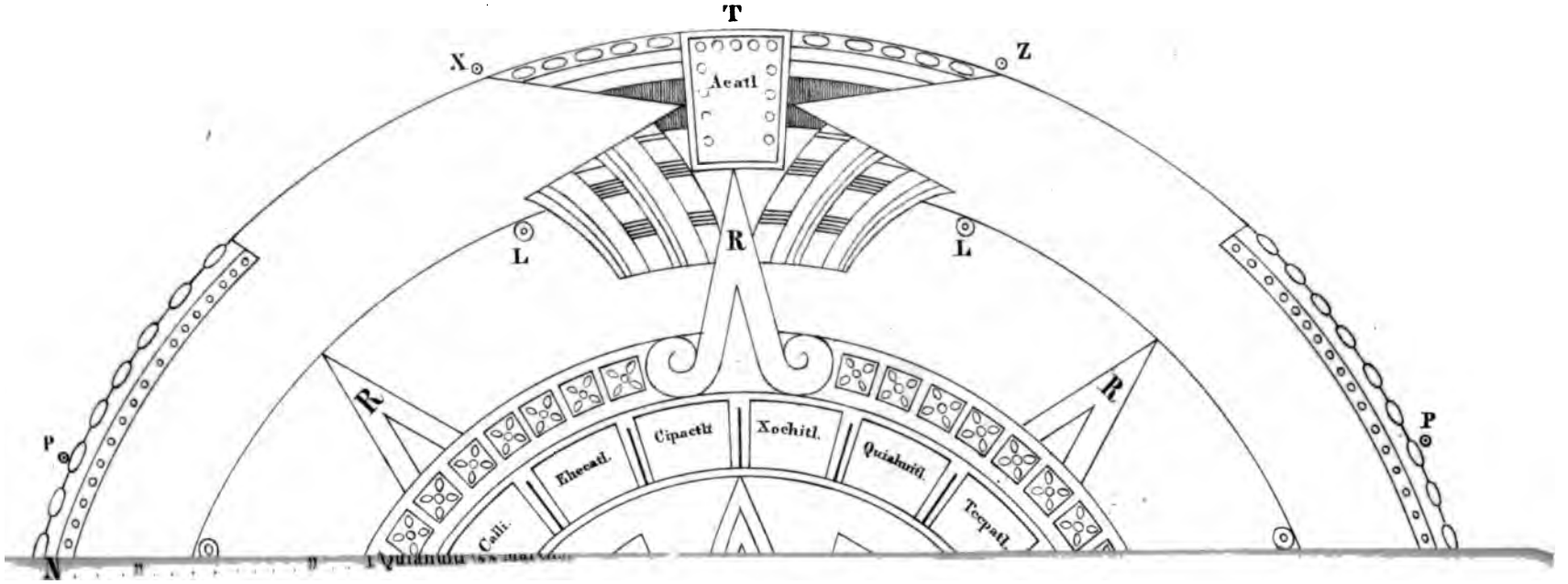


TABLE B

Mexican Months of the Year, with their respective Rank, and Correspondence with the Julian Year, New Style, according to the Systems of the several Writers.

First month Mexican year commences	GAMA. TITITL. N. S. 9th Jan.			CLAVIGERO.—SAHAGUN. XILAMANALIZTLI (Gama's 3d). 26th Feb. 2d Feb.				VALADES.—GEMELLI. TLACAXIPEHUALIZTLI (Gama's 4th). 1st March. 1st April.				VEYTIA. ATEMOZETLI (Gama's 18th). 2d Feb.		
	Rank of the month.	First day of the month corresponds with day of the Mexican year.	First day of the month corresponds with day of the Julian year, N. S. *Gama.*	Rank of the month.	Mexican year.	First day of the month corresponds with day of the Julian year, N. S. *Clavigero.*	*Sahagun.*	Rank of the month.	Mexican year.	First day of the month corresponds with day of the Julian year, N. S. *Valades.*	*Gemelli.*	Rank of the month.	First day of the month corresponds with day of the Mexican year.	Julian year, N. S. *Veytia.*
Titil Itzcalli	1	1	9 January	17	321	12 January	19 Decem.	16	301	26 Decem.	4 Febru'y	2	21	29 Febru'y
Itzcalli Xochihuitl	2	21	29 do.	18	341	1 Febru'y	8 January	17	321	15 January	24 do.	3	41	14 March
				1st Nemont'i	361	21 do.	28 do.							
Xilamanaliztli	3	41	18 Febru'y	1	1	26 do.	2 Febru'y	18	341	4 Febru'y	16 March	4	61	3 April
								1st Nemont'	361	24 do.	5 April			
Tlacaxipehualiztli	4	61	10 March	2	21	18 March	22 do.	1	1	1 March	10 do.	5	81	23 do.
Tozoztontli	5	81	30 do.	3	41	7 April	14 March	2	21	21 do.	30 do.	6	101	13 May
Hueytoztli	6	101	19 April	4	61	27 do.	3 April	3	41	10 April	20 May	7	121	2 June
Toxcatl	7	121	9 May	5	81	17 May	23 do.	4	61	30 do.	9 June	8	141	22 do.
Etzalcualiztli	8	141	29 do.	6	101	6 June	13 May	5	81	20 May	29 do.	9	161	12 July
Tecuilhuitontli	9	161	18 June	7	121	26 do.	2 June	6	101	9 June	19 July	10	181	1 August
Hueytecuilhuitl	10	181	8 July	8	141	16 July	22 do.	7	121	29 do.	8 August	11	201	21 do.
Miccailhuitontli	11	201	28 do.	9	161	5 August	12 July	8	141	19 July	28 do.	12	221	10 Septem.
Hueymiccailhuitl	12	221	17 August	10	181	25 do.	1 August	9	161	8 August	17 Septem.	13	241	30 do.
Ochpaniztli	13	241	6 Septem.	11	201	14 Septem.	21 do.	10	181	28 do.	7 October	14	261	20 October
Pachtli	14	261	26 do.	12	221	4 October	10 Septem.	11	201	17 Septem.	27 do.	15	281	9 Novem.
Hueypachtli	15	281	16 October	13	241	24 do.	30 do.	12	221	7 October	16 Novem.	16	301	29 do.
Quecholli	16	301	5 Novem.	14	261	13 Novem.	20 October	13	241	27 do.	6 Decem.	17	321	19 Decem.
Panquetzaliztli	17	321	25 do.	15	281	3 Decem.	9 Novem.	14	261	16 Novem.	26 do.	18	341	8 January
												1st Nemont'i	361	28 do.
Atemozetli	18	341	15 Decem.	16	301	23 Decem.	29 do.	15	281	6 Decem.	15 January	1	1	2 Febru'y
1st Nemontemi		361	4 January											
Last do.		365	8 do.											

SECTION IV.

HISTORY AND CHRONOLOGY.

The only historical paintings in Lord Kingsborough's collection, are that belonging to Boturini's collection, the latter parts of the Codex Vaticanus No. 3738, and of the Codex Tellerianus, and the first part of Mendoza's collection. If to these be added Gemelli's plate of the migration of the Atzecs (Humboldt's plate 32), there has not, to my knowledge, been published a single other chronological and historical Mexican painting. It will be seen that these afford but very scanty information. All, with perhaps the exception of that of Boturini, are compilations made subsequent to the conquest; and Mendoza's collection is the only one of which the origin is ascertained.

The four, or rather three, historical paintings of Lord Kingsborough's collection (for the Vaticanus and Tellerianus are identic,) have one common character. The regular series of years is designated in all, by their well known and usual Mexican distinctive characters. Neither the months nor days are set down in a single instance. The cycles are not distinguished; but the corresponding years of our era are set down in the text, and are alluded to, in the interpretation of Mendoza and in that of the Codex Tellerianus. The Italian explanation of the Codex Vaticanus No. 3738 does not embrace the historical part.

Antonio de Mendoza was Viceroy of Mexico from the year 1535 to the year 1551. The compilation, made by his order for the use of the Emperor Charles V., but which fell into other hands and was first published by Purchas, must therefore have been made within the first thirty years after

the conquest. It is accompanied by a Spanish interpretation, and consists of three parts, the first of which alone is chronological. Before proceeding to this, some account will be given of the two other parts.

The second part is a statement of the tributes paid by the several districts of country (pueblos) to Montezuma. Some of these were paid annually, other every six months, and other every eighty days. The number of districts paying tribute amounts to 363; of most of which the hieroglyphics, as well as their names in the oral language, are given: the quantities of each article are expressed in the paintings by the usual and well known hieroglyphics of numbers. The nature of the various articles of which the tributes consisted is expressed in the paintings by graphic representations of the objects, which would rarely be intelligible, without the aid of the annexed interpretation. These may be arranged under the heads of provisions, clothing, and a great variety of miscellaneous articles.

The principal articles of provision are counted by *Troxas* or Granaries, containing each from four to five thousand fanegas, or about 9000 bushels: and they are stated as followeth:

Annually,	Maize,	troxas	29
	Frijoles (beans),	do.	22
	Chian,	do.	20
	Guautli,	do.	18
	Cacao,	loads	980
	Axi (pimento or red pepper),	do.	1600
	Maguey and bees' honey,	jugs	3900
	White salt,	loaves	2000
	Cacahuap,	baskets	170

The maize and frijoles continue to this day to be the principal articles of food of the natives of Mexico and Central America. They used to prepare a cooling beverage out of the chian; but I cannot discover what is meant by the guautli. It is interpreted as being *semilla de Bledo;* but I

am not aware of any other native grain than maize having been, before the introduction of European cereales, an article of food of such general use, as the quantity mentioned seems to indicate. The cacahuap was a mixture of cacao and pounded maize.

The quantity of articles intended for clothing appears enormous, amounting annually to 140,000 loads of mantas and mantillas, besides 19,000 loads of dresses for women (huipiles and naguas). If, as stated by Don Fernando d'Alva, each such load consisted of twenty dresses, the aggregate would amount to an annual tribute of more than three millions of dresses. This may be exaggerated; but there can be no doubt that, compared with the other articles, the quantity was very large. All semi-barbarous nations are extremely fond of external ornaments; and it is probable, that the personal property of the wealthy Mexicans consisted principally of articles of dress. When Montezuma, at the request of Bernal Diaz, gave him an Indian girl, he told him: "This is the daughter of one of my principal nobility; treat her well and her friends will give you gold and mantles, as much as you can desire;" and the emperor gave him, at the same time, three plates of gold, and two loads of mantles.

Amongst the miscellaneous articles we find copal, amber, shells, Indian-rubber, cochineal, 4000 bales of cotton, 4000 reams of paper (eight plegos per ream), 13,500 chocolate and cacao drinking-cups, 4000 deer, tiger, and bird skins, 577 stands of arms, 54,000 loads of reeds for arrows and other uses, planks, timber, and lime, 31,000 handfuls and twenty bags of feathers, forty strings &c. of precious stones, 530 copper axes and 80 copper bells. To these must be added a moderate quantity of gold: to wit, two shields, two collars, a diadem, a head net, sixty cups of dust gold, each containing two almozadas, sixty tissues (texuelos), one inch wide and as thin as a wafer, and ten tablets twenty-four inches long, three inches wide, as thick as a skin.

The aggregate of the annual tribute of articles of food, maize, frijoles and guautli, amounts to about 600,000 bushels. With the exception of the dresses, the amount of the other items is moderate; and the whole, estimated in money, would not make up a very large sum. It seems probable that the tributes here enumerated were only those, which were applied to defray the expenses of the court of Montezuma, of the priests, of the nobility, and of numerous inferior attendants.

We know from another source, that similar tributes were paid for the support of the court of the princes of Tescuco;* and it is probable that the lord of Tacuba had also his share.

The interpreter of Mendoza's collection informs us that the sovereigns of Mexico had offices of their own, in each of the conquered districts; and we know, from the history of the Spanish conquest, that they held many places in awe by permanent Mexican garrisons. It seems evident that, exclusively of the tributes here above enumerated, heavy burthens must have been imposed, in order to defray the general expenses of government, and all those of a local nature out of the city of Mexico. There is another fact which deserves attention.

Amongst many other difficulties, the relative situation of the two distinct tribes, the Teneuchs and the Tlatilulcas, which together constituted the Mexican nation, is not satisfactorily explained any where. They are represented, as having migrated together, as never having separated, as united in all the wars against a foreign foe, and yet as forming two separate communities, having distinct sovereigns, and hating each other. They settled together on those small islands of the lake of Mexico, on which the city of that name was built; but they occupied distinct islands and always lived separate. Whether the division was religious or political, or both, is no-

* But D. Fernando D'Alva says, that all the tributes were paid in Mexico, and there divided between the three sovereigns. Perhaps the amount here above enumerated included, the provisions excepted, the share of all three.

where stated. In this, as in many other instances, a ridiculous legend is the only explanation of the origin of their division.

Whatever this may have been, it appears certain that, about fifty years prior to the Spanish conquest, actual war broke out between the two people, and that Moquihuix the last lord of Tlatilulco, who had been a brave and faithful ally of the Mexican sovereigns, was killed, and that distinct sovereignty was abolished. It is not however improbable, that this was always in some degree subordinate to that of Mexico. Whatever distinction or difference may have existed, the inhabitants of the quarter of the town, which still bore the name of Tlatilulco, fought as heartily as the other Mexicans against the Spaniards. Mendoza's collection reveals, however, the important fact, that the city proper of Mexico was not included amongst those which paid tribute; whilst, on the other hand, the people of Tlatilulco were held to keep in repair the temple named Huiznahuac, and besides to pay an annual though moderate tribute.

The third part of Mendoza's collection is altogether graphic; or, as it has been called, picture-writing. It appears to me to be the most important, and to convey more useful information respecting the education, habits, and social state of the Mexicans, than all the rest of Lord Kingsborough's collection. It is not susceptible of being abridged, and it seems desirable that it should be republished, together with the interpretation, in a convenient and portable form.

The painting, belonging to Boturini's collection, is undoubtedly that designated in the catalogue of his museum, as *Mapa* No. 1, of the 7th section, under the head of Mexican History. He describes it, as a map on Indian paper with folds like those of a piece of cloth, and which, if extended, would be equivalent to about twenty-three pages; and he adds, that it represents the departure of the Mexicans from the island of Aztlan and their arrival on the continent of

New Spain, with the places where they stopped and the respective years, expressed in their characters; finally, the wars in which they engaged in the service of Cocoxtli king of Calhuacan. There is no explanation of that painting; but twenty-four of the figures or hieroglyphics are numbered. I find no reference to those numbers in Lord Kingsborough's collection, published in the year 1830. But a copy of this painting is annexed to Mr. John Delafield Jun.'s Inquiry into American Antiquities, published in 1839; and, in this, the names of a few hieroglyphics are given in Mexican. The meaning of some of these is not understood, and the interpretation of some other appears erroneous.* But without reference to these, it is believed that a considerable portion which is graphical, may be interpreted with the aid of the hieroglyphics of the years and of three others which are well known, viz., Colhuacan, Chapoltepec (Locust Mount) and Prince Huitzilihuitl.

The beginning of the painting exhibits a man crossing a stream in a boat. Behind him are some human figures enclosed in an irregular parallelogram, which may be intended to represent an island. On the opposite bank of the stream, where the man is going to land, stands the hieroglyphic of the year 1 Tecpatl. Then follows a long series of graphic representations intermixed with some hieroglyphics; and next to these, the hieroglyphics of twenty-eight consecutive years, beginning with the year 2 Calli (which is that next ensuing the year 1 Tecpatl), and ending with the year 3 Tecpatl. The graphic representations alluded to designate too many

* That designated as No. 12, is interpreted Azcapotzalco, year 10 Acatl, corresponding with A. D. 1151. The Atzecs could not have reached that place till about 100 years later. The field of the hieroglyphic which designates a multitude is indeed the same as that of the City of Azcapotzalco; which misled the interpreter. But the animal represented in the well known hieroglyphic of that city is an insect intended for an ant. That in Boturini's painting is a rabbit.

events to have taken place in the course of one year; and they must therefore refer to those which occurred during the twenty-eight years above stated. After this there is an alternate succession of four human figures always repeated, but accompanied by different hieroglyphics, and of hieroglyphics of years, varying in number, but always following each other in regular order. There can be no doubt that the hieroglyphics, which accompany the four human figures, are those of the places where the Mexicans made any stay, and that the next following years designate the time they respectively remained at each such place.

The number of such places, and the periods of time they remained at each, are as follows:

Designation of Years.	Number of Years.	Designation of Years.	Number of Years
1 Tecpatl.		12 Tecpatl to 2 Acatl,	4
2 Calli to 3 Tecpatl,	28	3 Tecpatl to 6 Acatl,	4
4 Calli to 9 Acatl,	18	7 Tecpatl to 1 Acatl,	8
10 Tecpatl to 6 Calli,	10	2 Tecpatl to 5 Acatl,	4
7 Tochtli to 11 Tochtli,	5	6 Tecpatl to 9 Acatl,	4
*12 Acatl to 3 Acatl,	5	10 Tecpatl to 13 Acatl,	4
4 Tecpatl to 2 Acatl,	12	1 Tochtli to 4 Acatl,	4
3 Tecpatl to 6 Acatl,	4	5 Tecpatl to 8 Acatl,	4
7 Tecpatl to 10 Acatl,	4	Chapoltepec.	
11 Tecpatl to 1 Acatl,	4	9 Tecpatl to 2 Acatl,†	20
2 Tecpatl to 5 Acatl,	4	Chapoltepec and Huitzilihuitl.	
6 Tecpatl to 13 Acatl,	8	3 Tecpatl to 6 Acatl,	4
1 Tecpatl to 7 Acatl,	20		
8 Tecpatl to 11 Acatl,	4		

Making altogether 186 years.

After the last series of years, are some human figures and hieroglyphics, when the painting ends abruptly, so as to give it the appearance of a fragment.

The 186 years are equal to three cycles and 30 years; but the cycles are not designated; and the question arises,

* Erroneously marked 11 Acatl in Delafield's copy.

† In Delafield's copy, Acatl, erroneously without any number.

With which years of the Mexican era, or of our own, do they correspond?

It will be recollected that the Mexican era begins with a year 1 Tochtli, corresponding with A. D. 1090, on which year (or the next following 2 Acatl) the Mexicans first tied their years, and began to count their cycles. A table may therefore be formed showing the correspondence of each Mexican year with our own. It will be sufficient to show it for the several years 1 Tochtli, 1 Acatl, 1 Tecpatl, and 1 Calli, as the intervening years may be easily filled.

The following table exhibits that correspondence, beginning with the year 1038, the most remote date assigned to the migration of the Mexicans, and ending with the Spanish conquest.

	A. D.	Mexican year.
	1038	1 Tochtli
	1051	1 Acatl
	1064	1 Tecpatl
Cycles.	1077	1 Calli
1st.	1090	1 Tochtli
	1103	1 Acatl
	1116	1 Tecpatl
	1129	1 Calli
2d.	1142	1 Tochtli
	1155	1 Acatl
	1168	1 Tecpatl
	1181	1 Calli
3d.	1194	1 Tochtli
	1207	1 Acatl
	1220	1 Tecpatl
	1233	1 Calli
4th.	1246	1 Tochtli
	1259	1 Acatl
	1272	1 Tecpatl
	1285	1 Calli
Cycles.	1198	1 Tochtli
5th.	1311	1 Acatl
	1324	1 Tecpatl
	1337	1 Calli
6th.	1350	1 Tochtli
	1363	1 Acatl
	1376	1 Tecpatl
	1389	1 Calli
7th.	1402	1 Tochtli
	1415	1 Acatl
	1428	1 Tecpatl
	1441	1 Calli
8th.	1445	1 Tochtli
	1467	1 Acatl
	1480	1 Tecpatl
	1493	1 Calli
9th.	1506	1 Tochtli
	1519	1 Acatl

If we turn to the latter portion of the painting, we will find, immediately preceding the period of twenty years (from 9 Tecpatl to 2 Acatl), the well known hieroglyphic of Cha-

poltepec, or, the mount of locusts, not to be mistaken, as the locust placed on its top is nearly half as large as the mountain. The same hieroglyphic is repeated immediately after the said period of twenty years. This therefore indicates that the Mexicans resided at that place during that period; and according to all the traditions and other authorities, this was about the middle of the thirteenth century. Clavigero gives the date of the year 1245.

Following this period of twenty years, and preceding the last period of four years laid down in the painting, the presentation of a young man to a king is graphically exhibited. The king is recognised by the hieroglyphic of Colhuacan (a mount with a horn); the same as that of the monarch represented in Gemelli's Table (32d plate of Humboldt, figure No. 30); and he has, moreover, his appropriate symbol, the head of a hawk. The hieroglyphic of the young man, a bird's feather, is also well known: it is that of the Mexican king Huitzilihuitl. But the event here represented took place prior to the foundation of Mexico, of which the hieroglyphic is seen no where in the painting; and that king died between the years 1410 and 1417, more than one hundred and fifty years after the time when the Mexicans inhabited Chapoltepec. But another man of the same name is mentioned by the historians of Mexico.

The first appearance of the Atzecs or Mexicans in the valley of Mexico took place, according to all their legends, in the beginning of the thirteenth century. According to Clavigero, they arrived at Zanpanco in 1216, and removed to Tizayocan in 1223. At Zanpanco, the son of the lord of that city married an Atzec virgin; and they had a son born at Tizayocan, named Huitzilihuitl, who, according to Clavigero, was great-grandfather of the king of the same name. It would be idle to pretend to ascertain precise dates. But the approximation is sufficient to show, that the person here

represented is the elder Huitzilihuitl, whose significative name is expressed by the same hieroglyphic as that of the king.

The series of years in the painting terminates with the year 6 Acatl, which is the sixth year of the cycle, the first of which, 1 Tochtli, corresponds therefore with the year A. D. 1246; and the date of the presentation in question is according to the painting between the years 1247 and 1251, when the elder Huitzilihuitl was probably about twenty years old.

The same incident is represented in the plate 101 of the Codex Vaticanus No. 3738. We have no explanation of that plate; but it embraces the years 1295 to 1298; which last year is 1 Tochtli, the first year of the fifth cycle. The date there assigned is therefore about fifty-two years, or one cycle, later than that given in Boturini's painting. The date of 1298 also agrees better with that assigned, in the above mentioned plate of Gemelli, to the hieroglyphic of the king of Colhuacan; viz. after the end of the fourth cycle. This however may allude to that king who, in the beginning of the thirteenth century, enslaved the Mexicans. And independent of the superior authenticity of Boturini's map, the conformity of its dates with the Mexican era and legends is striking.

Ascending from the year 1 Tochtli, corresponding, as above stated, with the year 1246, it will be found that the year 1 Tecpatl, which is the first in the painting, corresponds with the year 1064; and that the next ensuing period of twenty-eight years, from 2 Calli to 3 Tecpatl, embraces the years 1065 to 1092. The year 1064 is precisely that which Gama has assigned to the departure of the Atzecs; and the year 1090 or 1091 is the era of the Mexicans, or that year when they first tied their cycle of years and began to count.

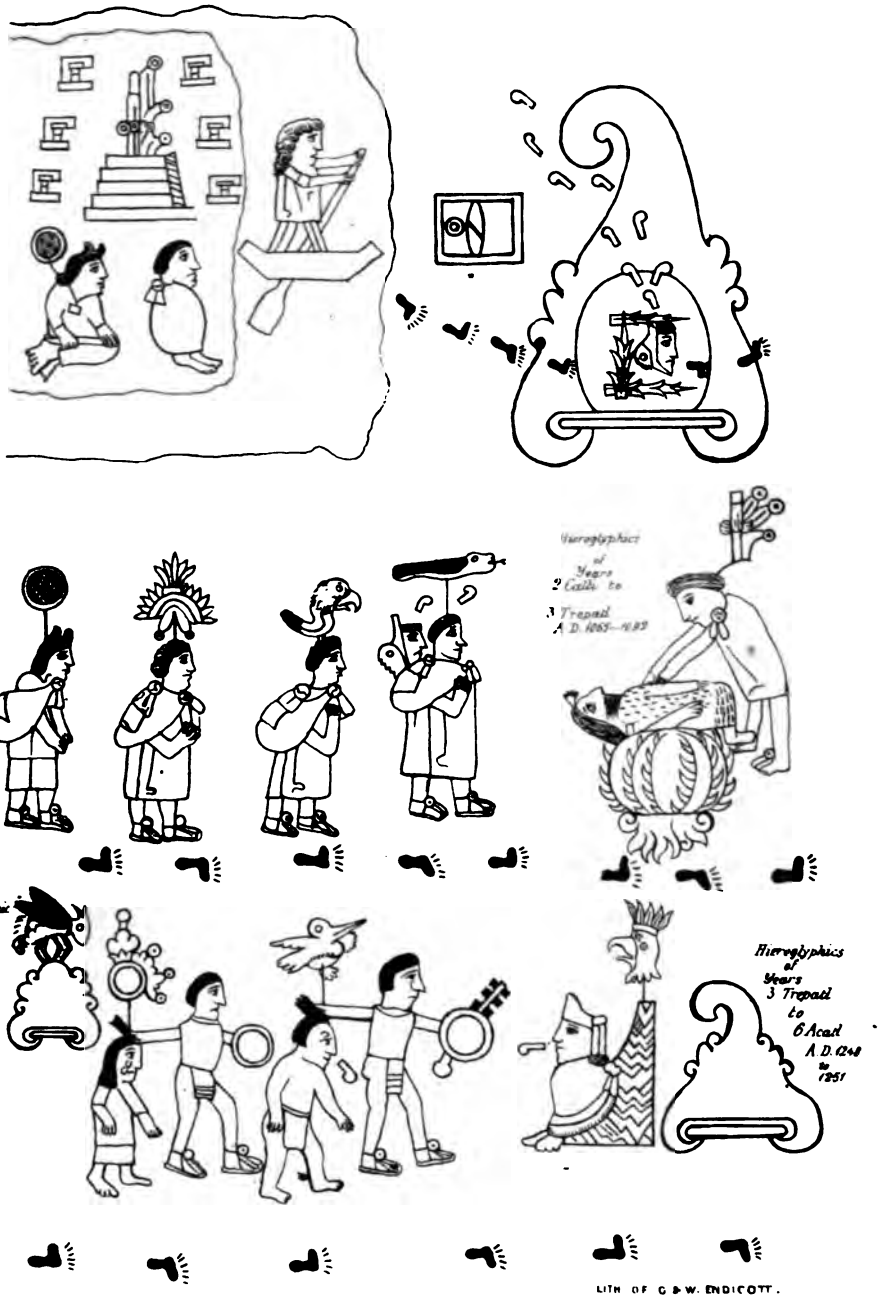
It has already been stated that the series of events represented between the first year of the painting, 1 Tecpatl, and the next ensuing period of twenty-eight years, must have taken place during the said period or during the years 1065 to 1092. The principal events thus graphically represented are first,

the separation of the tribes and the grief which it occasioned, indicated by the footsteps in different directions and by the tears shed by the men; secondly, the four priests carrying away the wooden statue of their god Huitzilopochtli. According to Clavigero they chose priests who were to carry him on their shoulders, four at a time. This cannot be understood literally, since only one could carry the statue on his shoulders at a time; and accordingly the painting represents a procession of four human figures, the first of whom carries the statue on his shoulders, and the three others carry also some burthens, probably articles connected with their worship; thirdly, the sacrifice of Tlalixco, always repeated at the end of each cycle.* Boturini's map shows that, contrary to the assertion of modern Indian writers, the beginning of their first cycle was consecrated by a human sacrifice, precisely similar to those performed to the last period of their monarchy, when, at the beginning of each cycle, they lighted the new fire. The victim in the painting is lying on his back, and the priest, bending over him, is tearing open his breast.

Without pretending to discuss the correctness of the facts and dates exhibited in this map, it is clear that they coincide so exactly with the ordinary legends of the Mexicans, that no reasonable doubt can exist, that the substance of these legends, transmitted to us by the writers subsequent to the conquest, was derived from this, or some other similar map. It must moreover be observed, that although other maps of the same character appear to have made part of Boturini's collection, some of which may have been in existence even so late as Gama's time; yet, with the single exception of that of Gemelli, no other map of the migration of the Atzecs, or of so ancient a date, has, within my knowledge, been published.

Gemelli's map begins with the flood, and ends with the

* See the annexed engraved plates of the principal events here stated, as transcribed from the painting in question.



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foundation of Mexico. It does not exhibit any series of years; but the cycles are designated by bundles of reeds tied up. Only six of these can be distinguished prior to that which, having the numeral four, designates the end of the fourth cycle, or the year 1298. Some confusion arises from the attempt made in that map, to condense in a single sheet that which, in order to be conspicuous, should have been extended to several feet in length. But whatever mode be adopted, in counting the commencement of the travels of nations after that which seems to represent the Babel dispersion, this event cannot, according to the map, be placed earlier than the tenth century after Christ. It is true that the authenticity of this map may be doubted. It is not a copy but an imitation of genuine Mexican paintings. Besides the substitution of curvilinear and revolving for straight lines, the human figures belong to the Italian and not to the Mexican school;* and the bird which distributes tongues, ascribing thereby to the Mexicans a traditional knowledge of the confusion of languages, is more than suspicious.

The tradition of the flood, though not universal, appears to have been preserved by several of the Indian tribes within the United States. Evidences of this catastrophe are visible on the face of the earth in America, as well as in the other hemisphere, though perhaps not always of the same character. The impression made by the destruction of mankind on the survivors was not entirely effaced after a period of more than 4000 years. The recollection was vivid amongst the Mexicans, though disfigured there as elsewhere by fabulous accounts.

It is remarkable that whenever a date was assigned to that event, it was comparatively recent. In other words, there is a complete blank between that catastrophe and the time to which the recent traditions of the American nations ascended.

* More than one of these is full face; all the Mexican are in profile.

An examination of Boturini's painting shows that it is not a departure, but an arrival. The conjecture of Boturini is, that the stream, crossed by the man in the boat, was the southern part of the Gulf of California, and that the event represented, is the landing of the Atzecs on the Main nearly opposite the southern cape of that peninsula. And he supposes that Aztlan, their presumed native country, was in Asia; and that, having in some way reached the northern parts of America, they had travelled uninterruptedly along the seashore, to the southern end of California, whence they crossed the Gulf.

Clavigero, who is much more rational, places the native country of the Atzecs, somewhere north of the Rio Gila, and he presumes that the stream crossed by the man in the boat, was the Rio Colorado of California. It is certainly much more probable that the Atzecs came from the country situated between the last mentioned river, or the Gulf of California, and the Rio Norte, than from California itself. But if Clavigero had been acquainted with the topography of the country, if he had known that the whole territory, between the Rio Colorado and the chain of the Californian mountains, is a sterile desert, where no number of men can subsist, he would also have known, that it was impossible that the Atzecs, coming from a country north of the Rio Gila, should, on their way to the south, have crossed the Rio Colorado.

It may be, that either the landing of the Atzecs, or their primitive abode, was the vicinity of Culiacan on the river of the same name, and in about twenty-five degrees of north latitude. This locality agrees with that assigned by Boturini. And although Clavigero attempts to trace the travels of the Atzecs from the Rio Colorado, ascribing to them the building of edifices, the remains of which are yet to be seen on the Rio Gila and at the place called Casa Grande, he makes them reach Huecolhuacan, at present called Culiacan; and it is

there that, according to him, they made a wooden statue of their god Huitzilopochtli. In the painting the well known hieroglyphic of Colhuacan (the horn mountain) is placed next to that of the year 1 Tecpatl, with which the series of recorded years begins.

It must be observed, that Clavigero, in attempting to reconcile the fabulous accounts of the historian Don Fernando D'Alva with probability, has assigned the year 1160, as the date of the departure of the Atzecs. But this is contradicted by the painting and all the other authorities; and it would place the first tying up of years, or era of the Mexicans, which is certainly the year 1090, seventy years before their departure, whilst, according to all the accounts of that reform of their calendar, it was adjusted in the course of their journey.

The first, or historical part of Mendoza's collection, com mences in the year 1 Tecpatl, corresponding with the year 1324 of our era, and ends with the year 3 Calli, or 1521, which is that of the Spanish Conquest. It is stated in the annexed Spanish explanation, that the history begins with the foundation of the city of Mexico by the Mexicans, who at that time called themselves Mecitis; that this event took place in the year of our Lord 1324; that they gave to the city the name of Tenuchtitlan; and that they had ten chiefs, whose names are given, one of whom, named Tenuch, they elected as their head and lord. The eighteen plates, of which this part of the collection consists, give the names and the length of the reign of that Tenuch and of the nine subsequent kings of Mexico. The series of years is regularly inserted in the margin, in the usual Mexican characters. The hieroglyphics of the various cities or districts conquered, or said to have been conquered, during each reign, appear in the paintings; and the Spanish explanation gives the corresponding names, in the oral language, of the said towns or districts The hieroglyphics and names of some of the principal chiefs

or governors in the reign of the last Montezuma are also inserted.

Besides the above stated notices, there is but a single event recorded in the paintings. It is that of the destruction of four canoes, and of the killing of five Mexicans, by the people of Chalco, during a war between the two nations. Baron de Humboldt has observed, that it was singular, that such an insignificant event should be thus recorded. It is still more astonishing that it should be the only one, the remembrance of which is thus preserved. It is evident that it must have been connected with some ancient legend, belonging to the infancy of their history, and of a character somewhat analogous to the Roman legend of the Horatii and the Curatii.

We are informed, in the Spanish explanation, that Chalco had been previously subdued, and that this was a rebellion. We find, in a subsequent plate, Chalco again subdued under the reign of the elder Montezuma, till which time it would appear, by the Codex Tellerianus, that it was an independent state. The fact is, that there was an inveterate hatred between the two people, and that those of Chalco, which was situated on the lake of that name, about twenty miles south-east of Mexico, earnestly required Cortez to aid them in shaking off the Mexican yoke, and heartily joined in the subsequent siege and capture of the imperial city.

The following is the list of the several kings of Mexico, showing the years when each began to reign, and the length of the reign of each. The substance of the information given by the paintings and by their explanation is also inserted; but it must be observed, that the paintings themselves give no other information than as above stated, and that the notices of the filiation, characters, etc., of the kings, as given in the explanation, must have been derived from some other source than the paintings. The spelling of the names, as given in the explanation, is preserved :—

Plates	Years of beginning of each reign.		Number of years each reign.
1	1324	Tenuch made Colhuacan and Tenayucan tributaries.	51
2	1375	Acamapich conquered four people, had many wives.	21
3	1396	Huicilyhuitl subdued eight people, was warlike, and had many wives.	21
4	1417	Chimalpupuca, son of Huicilyhuitl, subdued Tequixquiac and Chalco, which had rebelled; and in that war the Chalcos killed five Mexicans, and destroyed four canoes; he had many wives and sons.	10
5, 6	1427	Yzcoaci, son of Acamapich, subdued twenty-four people, was brave, warlike, and capable; had many wives, and seven sons and daughters. Death of Quauhtlaloa, lord of Tlatilulco.	13
7, 8	1440	Huehue Motecuma, son of the second king Huicilyhuitl, subdued thirty-three people; the lawgiver of the Mexicans, grave, virtuous, severe, but not cruel; contrary to Mexican habits, was very sober, temperate with women, had two sons.	29
9, 10	1469	Axayacazi, grandson of Yzcoaci, subdued thirty-seven people; amongst these Tlatilulco, whose last lord, Mequihuix, was killed; and from that time to the Spanish conquest, this nation became vassals of the lord of Mexico, paying him tribute. Axayacazi was warlike and valiant, viciously addicted to women, had many wives and sons, was proud and much feared by all his vassals.	12
11	1482	Ticocicatzi (Tizoc), son of Axayacazi, subdued fourteen people. He was extremely brave, whence he received the title of Tlacalecatl, which was held in great honor; he had many wives and sons; was virtuous, and governed well.	5
12, 13	1486	Ahuicocin, brother of Ticocicatzi, was a great captain, subdued forty-five people, extended his dominions as far as Acapulco, Tecpatepec, and Chiapa, and had also the title of Tlacalecatl; he had many wives and sons, he was magnanimous, liberal, gave great feasts, and being of a benevolent disposition, was much loved and respected by his vassals and captains.	16
14 to 17	1502	Moteccuma, son of Axayacazi, subdued forty-four people, amongst which Xoconochco and Teo Chiapa; was valiant in war, and had the title of Tlacalecatl, the most powerful and stately monarch	

Plates.	Years of his reign.		Number of years of each reign.
		of Mexico; he was learned, an astrologer and philosopher; had a great many wives, partly for show, and had many children, both legitimate and illegitimate; he raised large tributes with great rigor, and appointed governors over the several provinces of his vassals. He was thirty-five years old when he began to reign. Sixteen years after	
	1519	the Spaniards arrived under Cortez; and the con-	
	1520	quest was completed one year after his death.	18

The authors of this compilation and explanation were evidently Mexicans and partial to their nation. Clavigero correctly observes that, as it is notorious that the Mexicans were tributaries of the princes of Azcapozalco till about the year 1427, their pretended conquests before that time are doubtful, and that they could have been engaged in the former wars only as auxiliaries. Neither the fact of their having shaken off that yoke nor their alliance with Tescuco are mentioned. It is only in this chronicle, that Tenuch is reckoned as the first lord of Mexico. All the other authorities begin with Acamapich.

With the exception of the two Montezuma, there is a great uniformity in the characters ascribed to the several kings; they are all warlike and addicted to women. And Ahuicocia (Ahuitzol), the predecessor of the last Montezuma, the most cruel of the Mexican monarchs, and whose name has become proverbial, as meaning any great calamity, is represented as benevolent and beloved.

The Codex Vaticanus, No. 3738, and the Tellerianus are compilations, partly mythological, partly historical. It must be premised, that these two manuscripts are in fact identical. They differ in this only, that certain portions of the Codex Vaticanus are altogether omitted in the other, and that even in the portion in which they correspond, the Codex Telleri-

anus is mutilated; several plates being wanting, both in the mythological and in the historical parts. But, with a solitary exception, there is not a single plate of the Tellerianus which has not its counterpart in the Vaticanus. The exception consists of the very small plate No. 13 of the Tellerianus, which designates the five supplementary days of the year, and which is not found in the Vaticanus. Yet there are some varieties in the details; and it may be, that both have been transcribed from the same older and to us unknown original.

The historical part of the Codex Vaticanus commences with the year 2 Acatl (plate 91), which corresponds with A. D. 1195, erroneously designated in the plate as the year 1194. No plate is wanting, but one is misplaced. The plate 128 contains the years 1499 to 1501; the plate 130 the years 1502 and 1503; and the plate 131 the years 1504 to 1506. The plate 129, erroneously stated to refer to the years 1503 to 1506, is superfluous in that place. The Mexican years there designated are 11 Acatl, 12 Tecpatl, 13 Calli, and 1 Tochtli. Now the plate 100 terminates in the year 11 Tochtli, A. D. 1294, and the plate 101 commences with the year 2 Acatl, A. D. 1299. The four intervening years 1295 to 1298 are therefore wanting. These four years are the same as those of the plate 129, viz. 11 Acatl, 12 Tecpatl, 13 Calli, and 1 Tochtli. This plate must therefore be placed between the plates 100 and 101.

The historical portion of the Codex Tellerianus embraces what are called the third and fourth parts. The third part, which contains eight plates, begins with the year 5 Tochtli, or 1198, and ends in 1274. It contains nothing but names of people and places. The fourth begins with the year 11 Acatl, or 1399. There are afterwards several chasms which, as well as the correspondence between the plates of this and of the Vaticanus, appear in the annexed Table:

Plates.			Plates.		
Vaticanus.	Tellerianus.	Years.	Vaticanus.	Tellerianus.	Years.
91	3d part want'd	1195—1198	118	14	1473—1474
92	1	1198—1204	119	15	1475—1476
93	2	1205—1214	120	16	1477—1479
94	3	1215—1224	121	17	1480—1482
95	4	1225—1234	122	18	1483—1484
96	5	1235—1244	123	19	1485—1487
97	6	1245—1254	124	20	1488—1490
98	7	1255—1264	125	21	1491—1493
99	8	1265—1274	126	22	1494—1496
100	wanted	1275—1294	127	wanted	1497—1498
129	do.	1295—1298	128	do.	1499—1501
101	do.	1299—1307	130	23	1502—1503
102	do.	1308—1335	131	24	1504—1506
103	do.	1336—1355	132	25	1507—1509
104	do.	1356—1384	133	26	1510—1512
105	4th prt. 1	1385—1399	134	27	1513—1515
106	2	1400—1406	135	28	1516—1518
107	3	figures without years.	136	wanted	1519—1520
108	4	1407—1420	137	do.	1521—1522
109	5	1421—1439	138	do.	1523—1525
110	6	1440—1446	139	do.	1526—1528
111	7	1447—1454	140	29	1529—1531
112	8	1455—1457	141	30	1532—1534
113	9	1458—1460	142	31	1535—1537
114	10	1461—1462	143	32	1538—1540
115	11	1463—1466	144	33	1541—1543
116	12	1467—1469	145	34	1544—1546
117	13	1470—1472	After year 1549, no paintings.		

We have an Italian explanation of the Codex Vaticanus, which terminates with plate 92, and includes only the ten first years of the historical part. The notices of events must therefore be taken exclusively from the Spanish explanation of the Codex Tellerianus, in which are several chasms, as stated in the preceding Table.

The only information which it affords, prior to the year 1399, consists of the names of the tribes said to have sallied out of the seven grottoes or caves. These agree with those given in the Italian explanation of the 91st plate of the Codex

Vaticanus; but they differ from those given by all the other writers. According to these, the seven or eight tribes aforesaid were the various subdivisions, or people, speaking the same language as that of the Atzecs or Mexicans proper: whilst, according to the explanations aforesaid, they consisted of nations speaking distinct languages, viz. the Olmecas, the Xicalangas, the Chichimecs, the Nounoalcas, the Michinacas, the Couixcas (perhaps Oaxacas), the Totonacas and the Cuextecas.

The substance of the events, historical, or natural, mentioned in the explanation of the Codex Tellerianus will now be stated. The observation must be repeated, that a considerable portion of the historical events, mentioned in that explanation, is not derived from the paintings, but from other sources unknown to us. On the other hand, no explanation is given of several of the graphic representations and hieroglyphics contained in the plates.

Plate.	Year.	
1	1399	(11 Acatl). One hundred years had elapsed since the war of Chapultepec, when they were subjects of Chuluachan; they now resolved to set up for themselves and elected Acamapichtli; and this was their first foreign war.
2	1406	(5 Tochtli). Acamapichtli dies; he had married his two daughters to the lords of Coatlichan and of Chuluachan. After his death the Mexicans had concluded to ask a lord to govern them from Azcapucalco, one of the head states (cabaceros); but they changed their mind and elected one of their own people, Vitzilihuitli, for their lord.
3		This Vitzilihuitli married a grand-daughter of Acamapichtli, by whom he had no sons; and he had two mistresses, one called the painter, and the other the fly-driver (mosqueadora), and he had sons by them.
4	1414	(13 Tochtli). Vitzilihuitli died, and his son Chimalpopoca was elected; his name means "clouded shield."
5	1426	(12 Tochtli). Chimalpopoca died. Ytzcohuatl was elected. During his reign the Mexicans resolved no longer to serve those of Azcapucalco; and they remained free from those two heads. The captain who reigned

Plate.	Year.	
		at Azcapucalco was called Maxtli; and the earth eclipsed.
6	1440	(13 Tecpatl). Ytzcohuatl died, and Huehue Montezuhcuma was elected lord. He and the other Montezuma are the only lords of Mexico, on whom is placed the crown assigned to some of their gods.
7	1447	(7 Acatl). So much snow that men died.
"	1454	(1 Tochtli). Great famine kills many men. Tescuco, which was a district subject to Coatlichan, shook off the yoke. This was done through the instrumentality of the Mexicans. The same year the Mexicans drew to them those of Tlacuba; and from that year they remained lords of all the people of the lake. And Tescuco, Tlacuba, and Mexico, who had been subjects, were found lords of the whole land by Cortez, when he arrived.
8	1455	(2 Acatl). Was a fruitful year; in that year they tied the fifty-two years of the cycle.
"	1456	Those of Guaxocingo drive away those of Guacachula from the lands of Atlixo.
9	1458	(5 Tochtli). The Mexicans subdue the province of Chicoaque, north of Mexico and near Panico. This was the first province they subdued.
	1460	(7 Tecpatl). An earthquake; these always noticed in their paintings, as they thought that the world had been once destroyed by earthquakes.
10	1461	(8 Acatl). This year the Mexicans subdued the province of Coatlaxtla, twenty leagues from Vera Cruz; this is Guacacualco, in the province where the Spaniards found the Indian Malinale, whom they called Marina.
"	1462	(9 Tochtli). The Mexicans fought a battle at Coyxiquipilco, in the valley of Matalcingo. This year an earthquake.
11	1465	(12 Calli). The province of Chalco being engaged in a war against Tlascalla and Guaxocingo, the Mexicans came during their absence and took possession of the province; which from that year remained subject to the Mexicans. All the old people say, that it was from that year and that war between the Mexicans and the Chalcos, that they began to sacrifice prisoners of war; because till then they sacrificed only animals, and the men only drew blood from their own bodies.
12	1467	(1 Acatl). Great battle between the Mexicans and the Tlascallans on the borders of Tescuco and Tlascalla,

Plate.	Year.	
		on a mountain called Tiluquetepec, which means, "the black mountain."
12	1469	(3 Calli). Huehue Montenhecoma died and Axayacatzin was elected lord. An earthquake.
13	1472	(6 Tecpatl). The Mexicans began the war in the valley of Matalcingo, which was their first entrance into Toluca
14	1473	(7 Calli). War between Mexico and Tlatiluco. The Mexicans conquered; and the others were subdued and never had another lord of their own.
15	1475	(10 Acatl). The Mexicans subdued again Coatlaxtla, which had rebelled.
"	1476	(11 Tecpatl). The Mexicans subdued the province of Oguila. This year an eclipse of the sun.
16	1478	(12 Tochtli). The Mexicans subdued Xiquipilco.
17	1480	(1 Tecpatl). An earthquake.
18	1483	(4 Acatl). Axayacatzin died, and Ticocic was elected the lord. The first stone of the great temple laid this year.
"	1484	(5 Tecpatl). The people of Cinacantepec rebel; the Mexicans subdue them, and make such a slaughter, that hardly one man remained. This they did in order to inspire terror; and they sacrificed all the prisoners in the great temple of Mexico, which was not yet finished. All the old people say, that this was the first human sacrifice in the land, as they previously sacrificed only animals and birds.
19	1486	(7 Tochtli). Ticocic died, and Ahuitzotl elected his successor.
"	1487	(8 Acatl). The great temple of Mexico completed. The old people say, that four thousand prisoners of war were sacrificed this year; each branch of *negrillos* in the plate means the numeral 400.
20	1488	(9 Tecpatl). The Mexicans subdue the district of Thiapa called Cabellilotepec, and the district of Cuzcaquatenango.
"	1489	(10 Calli). A very great comet, which they called Xihuitli.
21	1491	(12 Acatl). The people of Tlacuba sacrifice a lord of Huaxotzingo, a prisoner made in the war called Tototacaque.
"	1493	(1 Calli). The Mexicans subdue the provinces Atlicatl, Yexico, and Chimalco.
22	1494	(2 Tochtli). The Mexicans subdued Mictla, in the province of Huaxaca.

Plate.	Year.	
22	1495	(3 Acatl). They subdued Teutzapotlan, the capital of that province. This year an earthquake.
"	1496	(4 Tecpatl). The Mexicans subdue Cultepec, where are now the mines. In this year a great eclipse of the sun.
23		The daughter of Mounteçoma, after she had sons by the lord of Tequantepec, informed her husband that her father had given her in marriage to him only in order to have an occasion to enter the land and subdue it; whereupon he forbid any more Mexicans coming into his country; and this continued till the arrival of the Christians who subdued it.
"	1502	(10 Tochtli). Ahuitzotl died, and Mounteçuma was elected his successor; whom the Marquis found when he came in the land.
"	1503	(11 Acatl). Great snows at Tlachquiaco, in the province of Huixteca.
24	1505	(13 Calli). Great famine in the province of Mexico, and they went for bread to the province of Pango.
"	1506	(1 Tochtli). So many rats in the province of Mexico, that they eat all the grain sown in the fields. This year Mounteçoma killed a man with arrows, in order to appease the gods, because, for two hundred years, there had always been a famine in the year 1 Tochtli. It was in that year that they used to tie the years of the cycle; and as it had always been a fatal year, Mountecuma changed the year of tying the years of the cycle to the ensuing year 2 Acatl.
25	1507	(2 Acatl). Eclipse of the sun; earthquake; eighteen hundred warriors drowned in Rio Tucac towards Ytzuca on the road of Mixteca, going to subdue provinces. This year the temple of the new fire completed, because they lighted the new fire every fifty-two years. That temple was on mount Visashtl, four leagues from Mexico (Cabeculihuacan), whence they carried the new fire through the whole land.
"	1509	(4 Calli). A great light seen in the night towards the east through all New Spain; it was seen during forty days, and extended from the earth to the sky. This is one of the wonders seen before the arrival of the Christians; and they thought it was Quecalcoatle whom they expected. This year, revolt of Cocola, six leagues from Huaxaca; the Mexicans were victorious; and the old people say that they did not leave one man alive.
26	1510	(5 Tochtli). An eclipse of the sun. They kept no account

Plate.	Year.	
		of the eclipses of the moon, and when one did happen, they said that the sun ate the moon.
26	1511	(6 Acatl). The Mexicans scale with ladders and take Yepaltepec, situated on a craggy rock. Great snows this year, and the earth shook three times.
"	1512	(7 Tecpatl). The Mexicans conquered the people of Quimichintepec and Nopala, towards the province of Tolotepec. This year the stones smoked so much that the smoke rose to the sky.
27	1513	(8 Calli). The Mexicans subdued Tototepec, a province on the South Sea, eighty leagues from Mexico. There was this year such an earthquake, that, as the old people say, so numerous were the birds flying from east to west, that they obscured the sun; and those they took had no guts, but were filled with skins and excrements.
"	1514	(9 Tochtli). The Mexicans conquered the province of Hayocingo, which had so long defended itself; and, according to the paintings, the people of that province came to serve the Mexicans with gold collars.
"	1515	(10 Acatl). The Mexicans subdued Vtzlaquetlaloca.
28	1516 to 1518	The explanation of this plate is torn out in the original manuscripts.

There is here a chasm including the years 1519 to 1528. The 29th plate commences with the year 1529. The plates continue till the year 1549; after which the years alone are set down, but without any figures or hieroglyphics in either Codex. They both terminate nominally in the year 1562; but the thirteen last years are blank. The years 1550 to 1555 are altogether omitted in the Codex Vaticanus; and the interpretation of the Tellerianus, subsequent to the year 1546, is called an addition, and is in a different handwriting.

It appears by the text, that the greater part of the paintings of the Codex Vaticanus was copied by Father Pietro de Los Rios, that he is the author of at least a part of the Italian interpretation, and that he was in Mexico in the year 1556. Upon the whole it is probable that the compilation was made between the years 1546 and 1560.

The plates 136 to 139 of the Codex Vaticanus refer to the years 1519 to 1528, which are wanting in the Tellerianus, and of which we have therefore no interpretation. The entrance of Cortez into Mexico is represented in the plate 136 under the hieroglyphic of the year 1519. It is a mutilated copy of that painting, heretofore mentioned, from which has been deduced the correspondence of the Mexican with the Julian year. In this the Spanish horseman is alone represented, but not the foot soldier, on whose leg was inscribed the day of the month Quecholli, on which the entrance of Cortez took place.

At the upper corner of the same plate, and next after the hieroglyphic of the year 1520, is seen a serpent (*Cohuatl*) protruding from a semicircle containing five stars. This may have been intended as a representation of the day 5 *Cohuatl*, in which case it corroborates Gama's opinion that the Indians metaphorically indicated the destruction of their empire, by the sign of that most fatal day. The plate 138, year 1524, contains a graphic representation of that atrocious act of Cortez, the unjustifiable execution of Guatimozin and of the prince of Tacuba. The incidents of the conquest and the subsequent events are, however, foreign to the present inquiry.

The compilers of the Codex Tellerianus, or rather the Indians who furnished the materials for its Spanish interpretation, were evidently Mexicans, and partial to their nation. No fact in their history is more notorious and better established than the alliance of the sovereigns of Tescuco and Mexico, the decisive victory by their joint efforts over the sovereign of Azcapucalco, the emancipation of the Mexicans who till then were his tributaries, and the transfer of the principal authority over the valley of Mexico from that principality to the new allies.* This event took

* The princes of Azcapucalco reigned over the Tepanacas, a tribe speaking the same language as the Mexicans. A prince of the same family was made

place during the reign af Ytzcohuatl, fourth king of Mexico, who ascended the throne in the year 1426 or 1427, and died in the year 1440. The author of the interpretation of the Codex Tellerianus ascribes the emancipation of the Mexicans to them alone, and then states that, in the year 1454, Tescuco, which was a district subject to Coatlichan, shook off the yoke, and that this was done through the instrumentality of the Mexicans. The Tescucan historian gives a very different version of the event, and equally remote from truth.

The authors of the interpretation cannot, however, be charged with partiality, when they acknowledge that Chalco was a free district, and not conquered by the Mexicans till the year 1465. But they assert at the same time that, *all the old people say*, "that it was from that year and that war between the Mexicans and the Chalcos, that they began to sacrifice prisoners of war." And subsequently it is again asserted, under the date of the year 1484, in reference to a war with the people of Cinacantepec, that the Mexicans sacrificed all the prisoners in the great Temple of Mexico; and that *all the old people say*, "that this was the first human sacrifice in the land, as they had previously sacrificed only animals and birds."

As there was nothing more odious than the hecatombs of men actually sacrificed by the Mexicans to their gods, there was a constant and strenuous effort, on the part of the early Indian writers after the conquest, to ascribe that abomination to the Mexicans alone, and to assign to its introduction a recent date. Don Fernando D'Alva attempts to exonerate his ancestors of Tescuco: and more cautious writers than the authors of the Codex Tellerianus, by placing its origin in the beginning of the fourteenth century, and before the foundation of Mexico, rendered it difficult to disprove their asser-

their king, with the name of prince of Tacuba, and recognized as an inferior member of the alliance, by the sovereigns of Mexico and Tescuco. This arrangement lasted till the Spanish conquest.

tion. The historical painting in Boturini's collection, of which an explanation has been given, proves conclusively that, according to their own legend, human sacrifices were practised by the Mexicans as early as the year 1091. That same practice did prevail in Tobasco, in Yucatan, in several other places, and, what is more in point, in the ancient Toltec colony of Nicaraguá. The precise date cannot be ascertained, but it appears extremely probable that it was as ancient as the consolidation of their infamous religious system and of the despotism of the priests.

On the other hand, it is probable that, although the impregnable position of their city contributed greatly to the success of the Mexicans, they also exceeded all the other tribes in bravery and ferociousness. They were held in execration by all the neighboring nations, whether conquered or still unsubdued. Their habitual sanguinary worship, the myriads of human beings annually sacrificed on the altars and in honor of their gods, have no parallel in the annals of any other nation known to us, nor, it is believed, of America. Sahagun and the other early missionaries made but a slight mistake, in supposing that the Devil was the author and the object of such worship; their gods were fictitious beings, the priests were the demons.

Another extraordinary assertion of the interpreters of the Codex Tellerianus is that, instead of having its origin in the year 1091, and in honor of the God of War, it was as late as the year 1506 that the last sovereign of Mexico changed the time of tying the years of the cycles and of commencing a new one, from its first to the next ensuing year (from 1 Tochtli to 2 Acatl). The reason given for that alteration is much more rational than that of the legend; but the compilers forgot that they had stated that the years of the preceding cycle had been tied in the year 2 Acatl, or 1455.

I am not aware that any other chronological painting has ever been published, besides those of which an account has

now been given. And the observation must be repeated, that the greater part of the information, contained in the interpretations annexed, is not derived from the paintings, but from some other source, and probably from tradition. There is hardly a single plate which does not afford proofs of this assertion. I select an instance, which may be easily verified, because the portion of the plate to which it refers, No. 3 of the last part of the Codex Tellerianus, is one of those published by Baron Alexander de Humboldt (Plate 55, fig. 3).

The representation in the painting is that of king Huitcilihuitl, designated by his well known hieroglyphic, in connection with a female figure with an unknown hieroglyphic. The interpretation given, is: "This Vitzilihuitli married a granddaughter of Acamapichtli, by whom he had no sons; and he had two mistresses, one called the painter, and the other the fly-driver (mosqueadora), and he had sons by them."

Now the painting contains only the two figures above stated. It may be that the hieroglyphic connected with the woman designates her profession as a painter. But the painting contains nothing else, nothing indicating or alluding to the other facts stated in the interpretation. That this king had married a granddaughter of his predecessor;* that he had another mistress called the *mosqueadora*; that he had sons by two mistresses, and none by his first wife; are facts derived from a source other than the painting.

Mendoza's collection commences with the year 1324, which is assigned as the date for the foundation of Mexico. The historical portion of the Codex Tellerianus begins, in fact, with the year 1399. It has already been stated that we have no interpretation of the plates which correspond with the years 1275 to 1399; and that the interpretation of those

* It is generally agreed that Huitcilihuitl was the second king of Mexico. The interpreter of Mendoza's collection does not state whose son he was. Don Fernando D'Alva, Clavigero, and other late writers, make him the son of Acamapichtli.

which correspond with the years 1198 to 1274 gives us only the names of some tribes or places. The scanty information derived from Boturini's manuscript embraces the years 1064 to 1252. It may be safely asserted that we have nothing which deserves the name of history prior to the year 1324, the presumed date of the foundation of Mexico, and no more than two hundred years prior to the Spanish conquest. Even that date is uncertain, and all the events prior to the revolution of 1327, which may be considered as the true era of the establishment of the Mexican monarchy, are obscurely related and doubtful. The interpretation of all the events prior to that date, as recorded in the chronological paintings which are known to be still in existence, does not fill two pages.

The zeal with which the early missionaries destroyed indiscriminately all the paintings which, as they thought, might perpetuate idolatry, is well known. The priests of Mexico fought to the last moment, and were probably exterminated. Those of Tescuco may have fared better, but the Archbishop of Mexico took special care that all their records should be destroyed. Some might escape; but there, as in Yucatan, it became highly dangerous to teach their meaning, and we have the testimony of Don Fernando D'Alva and other early writers, that they had become unintelligible very soon after the conquest. Of this we have a further proof in the fact already stated, that the explanation of the Codex Tellerianus gives no interpretation of a considerable portion of the hieroglyphical or even graphical paintings preserved in that Codex.

Amongst the records relating to more ancient times, which had escaped destruction, and which made part of Boturini's collection, there was one, designated as No. 1 of third section, written on Indian paper, which purports to represent the beginning of the Chichimec empire from the time of Xolotl, and is said to have been in the possession of Don Fernando D'Alva. Another, designated as No. 1 of first section, pur-

ports to be a manuscript history in the Mexican language, together with painted representations of the travels, acts, &c., of the Toltecs, and the hieroglyphics of both the years and days in which the events took place, from the arrival of the Toltecs at Tulla, till twenty-six years after the Spanish conquest. This being written on European paper, and after the conquest, may not be very authentic; but Gama asserts that it was in his own possession, and it may therefore be recovered. What would render it interesting is, that not a single painted manuscript has ever been published, in which the year and the day of the month are both designated.

Judging of the value of the historical records which may have been destroyed, by those which have been preserved, the loss is perhaps less to be regretted than is generally supposed. That which is preserved consists so much of what has been properly called picture writing; the hieroglyphics of the significative names of days, places, and persons have preserved such similitude with the objects intended to be represented; those which, like that of water, have a symbolic character, are so few, that it may be doubted whether the imperfect art of writing of the Mexicans enabled them to keep records more detailed or instructive than those exhibited in Mendoza's collection, and in the Codex Tellérianus.

Whatever may have been the value of the Mexican paintings destroyed by the Spanish clergy, it has now been shown that those which have been preserved contain but a meagre account of the Mexican history, for the one hundred years preceding the conquest, and hardly any thing that relates to prior events. The question naturally arises, from what source those writers derived their information, who have attempted to write not only the modern history of Mexico, but that of more ancient times? It may, without hesitation, be answered, that their information was traditional. The memory of important events is generally preserved and transmitted by songs and ballads, in those nations which have attained

a certain degree of civilization, and had not the use of letters. However blended with fable and poetical ornaments, the truth may still in many instances be extracted. Unfortunately, if we except the hymns of the great monarch of Tezcuco, which are of recent date, and allude to no historical fact of an earlier date than his own times, no such Mexican remnants have been transmitted to us, or at least been published. On the other hand, the recollection and oral transmission of events may, in Mexico, have been aided by the hieroglyphics, imperfect as they were. Thus those of the significative names of a king and of a city, together with the symbol of the year, would remind the Mexicans of the history of the war of that king against that city, which had been early taught him, whilst a student in the Temple. It appears to me indubitable that the knowledge of their code of laws, as described in the most valuable memoir of Zurate,* must have been transmitted orally in some such manner, and could not have been expressed intelligibly by their hieroglyphics alone. The specimen of the record of a law-suit, brought from Mexico, and published by Baron de Humboldt (plate xii.), is only a survey of the premises in dispute, and conveys no notion of the respective titles and arguments of the parties.

The historical writings of Chimalpain, Cristoval del Castillo, and other Indian authors, who wrote in their own language shortly after the conquest, have never been translated or published; and no opinion can be formed of their intrinsic merit. Sahagun, Torquemada, and other early Spanish writers derived the greater part of their information from oral communications. In order to judge of the degree of faith to which they are entitled, it would be necessary to institute an investigation far beyond the limits of this essay. A selec-

* This important document, though published for the first time by M. Ternaux Compans, was in Dr. Robertson's possession. He describes it minutely in his Note CXLIV.; but he erroneously calls the author Don Alonzo de Corita, one of the judges, &c.

tion must be made; and a succinct account will now be given of the historical facts, prior to the fifteenth century, stated respectively by Sahagun and by Don Ferdando D'Alva. The first is a respectable and the most ancient authority; modern writers have borrowed many of their facts from the last mentioned author.

Sahagun, a Franciscan monk, went to Mexico as early as the year 1529, and remained there till the time of his death, in 1590. It appears by his work (written about 1571), and which was but lately published, that he had paid much more attention to the mythology, astrology, occupations, and customs of the Mexicans, and to the natural history of the country, than to astronomy and history. In proof of his carelessness in the last respect, it may be observed that, in the fifth chapter of his eighth book, he states that the first lord of Mexico, Acamapichtli, was elected in the year 1384. And in the first chapter of the same book he gives the length of the reigns of the nine kings, from Acamapichtli to the death of the last Montezuma, amounting togther to 141 years. This would give the year 1525 for the death of Montezuma, which Sahagun knew perfectly well to have taken place in the year 1520. But he is much more sober in his dates and conjectures than subsequent writers.

The following notes are extracted from the six first chapters of his eighth book. In the 29th chapter of his tenth book, he enumerates the several nations of New Spain; and the account is interspersed with some of their traditions. But as he does not assign any date, hardly any use has been made here of this part of his work. A tradition, however, must be mentioned. The inhabitants of Huasteca are said to have arrived there by sea. Whence and when they came, Sahagun does not pretend to conjecture. It would seem however from his account, that they had brought and spread some new religious worship: and he mentions a remarkable fact, viz., that during the reign of Ytzcoatl (the monarch who emancipated the

Mexicans from the yoke of the sovereigns of Azcaputzalco), their painted records were burnt by the government, in order that they should not fall into the hands of the common people and into contempt.*

According to Sahagun's eighth book, the Toltecas coming from the north were the first inhabitants of the land of Mexico, and lived first at Tullantzinco and afterwards at Tulla. He speaks at large of their learning and of their progress in arts, of their god Quetzalcoatl, and of a priest or king of the same name, at whose persuasion they left Tulla for a country or city towards the east called Tlapallan or the City of the Sun. This city they destroyed; and those who fled from it, founded the celebrated town of Cholulla. It seems that Quetzalcoatl disappeared in that quarter, and that he is expected to return and to rebuild the City of the Sun. The Mexicans at first mistook Cortez for this expected supernatural being, but were undeceived by his conduct and that of his followers. All who speak the pure Mexican language, or Nahoas, are descendants of the Toltecs who did not follow Quetzalcoatl. Sahagun does not pretend to give the date of the first establishment of their monarchy, and does not allude otherwise to its destruction, than by saying, that the Chichimecas came into the valley of Tezcuco twenty-two years after the destruction of Tulla, and that the first lord of Tezcuco who was called lord of the Chichimecas and named Tlaltecatzin, was elected in the year 1246. He assigns to that king a reign of uncertain duration,† and gives him for successors Techotlala who reigned

* No se puede saber que tanto tiempo estuvieron en Tamoanchan, y se sabia por las pinturas, que se quemaron en tiempo del señor de Mexico que se decia Ytzcoatl, en cuya época los senores, y los principales que habia entonces, accordaron y mandaron que se quemasen todas, para que no viniesen á manos del vulgo, y fuesen menospreciadas. (*Sahagun*, Book X. Chap. 29, 12th paragraph, pages 140, 141, Vol. III., of Mexican edition.)

† According to the text, *ochenta dias nomas*, which I do not understand; by implication, according to his subsequent account, it should be about forty years.

70 years and Ixtlilxuchitl 61 years; and he adds, that nothing worthy to be recorded occurred during these three reigns.* The next kings are Netzahoalcoiotzin who reigned 71 years, Netzahoalpilli 53 years, and Cacomatzin 4 years. The Spaniards arrived during his reign, and the Tezcucans had then reigned 300 years, more or less. The first Chichimecs, who arrived in the province of Tezcoco, made their first settlement at the place called Vexotla (Huezotla); and the names of thirteen lords of that place are given, who together reigned more than 400 years, till the Spanish conquest. This is the most ancient approximate date given by Sahagun. The duration assigned by him to the reigns of the kings of Mexico has already been alluded to; and he also gives the names of the kings of Tlaltelolco.

The most remarkable feature in Sahagun's historical notices is that he, the most early Spanish author who collected Indian traditions and paintings, whilst his accounts are substantially the same as those of subsequent writers, does not attempt to give a single date prior to the twelfth century, and this in a vague manner, when he says that the lords of Vexotla reigned 400 years, more or less. The most ancient actually designated, is that of the year 1246. His inaccuracy in the dates he gives has already been adverted to; and another instance might be added of a contradiction respecting the length of time that the people of Tlaltelolco had kings. But Sahagun is entitled to the credit of having invented nothing. He gives the names, durations of reigns and dates, as he received them from the oral communications of the best informed Indians in each place respectively. He states the tradition respecting the Toltec nation, as it was current among the Indians; and if he assigns no dates for the foundation of their monarchy, or to any other event prior to the dominion

* These two last kings and those who follow correspond in name with those of Don Fernando D'Alva.

of the Chichimecs, Acolhuas and Mexicans, it is because none was known to the Indians or communicated to him.

Don Fernando D'Alva Ixtlilxochitl was, at the beginning of the seventeenth century, the Indian interpreter of the Viceroyalty of New Spain. His father and two grandfathers were Spanish gentlemen: his maternal grandmother was the grand-daughter of Ixtlilxochitl, that last prince of Tezcuco, who betrayed his country and assisted Cortez in the conquest of Mexico and subsequent enterprises. Don Fernando D'Alva wrote in the Spanish language the history of that Prince, that of the Chichimecs, which appears to have been written about the year 1608, and several series of Relations, which have not been published, and are described as being, either new editions, or abridgments of his history of the Chichimecs. We are indebted to Mr. Ternaux-Compans for the translation and publication of this last work, to which he has added some notes extracted from the Relations.

The author begins with the fabulous accounts of the Mexicans respecting the successive ages of the world and renewals of the sun. The duration of each of those three ages is stated to have been 1716, 1715, and 1347 years. The first destruction was caused by the flood, the second by earthquakes, the last by hurricanes. During the second age, the earth was inhabited by giants; during the third by the Ulmecs and the Xicalanques. According to their histories, they came in vessels or canoes from the east, landed in the country of Potonchan, and extended their settlements towards Chololan. They enjoyed a great prosperity, when Quetzalcoatl appeared amongst them, and after having taught them, he disappeared towards the east, in the quarter whence he had come, near the coast of Coatzacoalco. Immediately after, the hurricane destruction took place, which overthrew the magnificent edifices of Chololan. Those who escaped those disasters built upon its ruins a temple to Quetzalcoatl as god of air. According to the annals and histories, the

epoch at which he appeared corresponds with that of the birth of Christ.*

During the fourth or present age, the Toltecs, driven from their native country, after a long navigation along the coast of California, arrived at Huehuetlapallan (old Tlapallan) in the year 387 after Christ. Thence sailing along Xalisco, and traversing several provinces, they arrived at Tochtepec on the South Sea. Subsequently they colonized Tollantzinco, and finally founded the city of Tollan, where they elected their first king named Chalchiuhtlanetzin, in the year 510 of our Lord.† Then follows a list of nine sovereigns, under whose reign the Toltec monarchy extended its dominion over one thousand leagues, and who founded a number of magnificent cities, amongst them Tulla, Teotihuacan, Chololan and Tototepec; all which are destroyed, though their ruins remain. The last king was Topiltzin, who ascended the throne in the year of our Lord 882. Under his reign the country was desolated by sterility, plague and famine: most of the vassal princes rebelled; and a dreadful civil war ensued, equally fatal to both parties, and which terminated in the overthrow of the monarchy, and the almost entire destruction of the nation itself.‡ Some of the Toltecs fled into distant provinces: very few remained in the vicinity of the lake of Mexico. This total destruction took place in the year 1 Tecpatl, corresponding with A. D. 959. The Toltecs were great idolaters, and their principal gods were the sun and the moon.

* Fernando D'Alva, in another relation, says that the destruction of Chololan happened A. D. 299.

† According to another relation of the same author, the wise men of the Toltecs met in the year of the world 5097, at Huehuetlapallan, in order to regulate their calendar; and they were driven from their country in the year 439 of our Lord. The editor says that his works are filled with similar contradictions.

‡ Fernando D'Alva, in another of his relations, says that, during the three years one month and eighteen days, which the last war lasted, there perished, on both sides together, five millions six hundred thousand souls.

Five years after the destruction of the Toltecs, the great Chichimec, Xolotl, finding the country abandoned, came to colonize it in the year 963, accompanied by his son Nopaltzin, then a young man, and with an army of more than one million of men, without counting the women and children. He came from a country toward the north, called Chicomoztoc; and settling himself on the banks of the lake of Mexico, he occupied at first a country two hundred leagues in circumference, including the circle of mountains which forms the valley of Mexico; and subdued the few Toltecs who, under the name of Culhuas, had remained on the borders of the lake. The residue of this nation had fled to other countries, some as far as Nicaragua and beyond it. Forty-seven years after Xolotl's settlement in the country of Anahuac, in the year 1011, the Aculhuas, coming from the most remote part of Michoacan, came and united themselves with the Chichimecs. They had the same origin with these, and consisted of three bands, the Tecpanecs, the Otomites, and the Aculhuas proper, speaking different languages and having separate chiefs. Aculhua, the prince of the Tecpanecs, married a daughter of Xolotl, and settled at Atzcaputzalco, which became his capital. He had three sons: Tezozomoc who succeeded to the lordship of that place, another who was the first lord of Tlatelolco,* and Acamapichtli who reigned over the Tenuchcas or Mexicans, who were the last who came and settled in the country. Xolotl extended his dominions farther towards the south, and divided the lands he had conquered amongst the principal chiefs of his nation. The Chichimecs had no other God but the sun and the earth; and they drew from the forest the game they wanted for food and clothing. Not long before his death, his grandson Huetzin built three large walls; two in order to protect the plantations of maize and other grains, which were the food of the

* It must be recollected that the Tenuchcas, and those of Tlatelolco, were the two tribes which united founded Mexico, and are called Mexicans.

Aculhuas and of the Toltecs; the third formed a park for deer and other game. Xolotl died at Tenayucan in the 112th year of his reign, and 117 years after the destruction of the Toltecs.

His son Nopaltzin succeeded him; and under his reign the empire which, besides the provinces of the Chichimecs, embraced Mixtecas and Michoacan, enjoyed the greatest prosperity. He passed laws inflicting penalties on those who should appropriate to themselves game taken or wounded by others, and the pain of death against those who would remove the boundaries of the hunting grounds belonging to individuals. Huitzilihuitzin, second king of the Mexicans, was born under his reign. Nopaltzin reigned thirty-two years, and died in the year 1107. As soon as his son Huetzin had ascended the throne, he occupied himself with the cultivation of the soil, with which a long residence in the province of Chalco had made him acquainted. He gave orders for that purpose, which were obeyed by most of the Chichimecs; though a certain number, wishing to preserve the manners of their ancestors, withdrew into the mountains of Meztitlan and other remote parts. It was at this time that they commenced every where to cultivate the ground, to plant maize and other vegetables, and, in the warm lands, cotton for clothing. Formerly the Chichimecs lived in caves or in straw huts; they subsisted on game, and clothed themselves with the skins; the kings and lords wore, under the skins, stuffs made with the thread of Maguey, or with cotton, when they had it. Huetzin died in 1141, after a reign of thirty-six years. He was the last who held his court at Tenayucan. His son and successor, Quinantzin, removed it to Tezcuco.

The very year of the death of Huetzin the Mexicans arrived at the place where is now the city of Mexico which belonged to Aculhua, lord of Atzcaputzalco. It appears that they came from the borders of the province of Xalisco, and that they were of the same race as the Toltecs, and of the

family of a nobleman of this nation named Huetzin, who at the time of the destruction of the Toltecs had, with his family and servants, fled through Michoacan, to the province of Aztlan, where he died. His descendants resolved to return to the country of their ancestors. They arrived after many adventures, carrying with them their principal idol Huitzilopochli, and placed themselves under the protection of Aculhua, who gave to the two tribes his two sons for chiefs. Their power being increased, they plundered the city of the Culhuas, who, though of the same nation, had shown themselves hostile to them.

Quinantzin advanced the civilization of the Chichimecs, by inducing them to build towns and villages. There were several civil wars during his reign within the bounds of the valley of Mexico; but none in the more remote provinces, whose inhabitants, though gradually increasing, were not yet numerous. In one of those civil wars, the Mexicans for the first time took up arms in defence of the empire. Coxcox is mentioned as being during that reign king of the Culhuas. Quinantzin died aged one hundred and two years, in the year 1253. He was succeeded by his son Techotlalatzin, who was the first who spoke the Nahuatl or Mexican language. He ordered the Chichimecs, and particularly public officers, to speak it, and showed generally great favor to the Toltecs.

Under his reign (about 1301) Aculhua, king of Alzcaputzalco, died, and had for his successor Tezozomoc. His reign had been very long; for it appears from histories, that the Aculhua and Chichimec lords lived two or three hundred years; an advantage that their descendants lost by their voluptuous life.

Tezozomoc, with his brothers, the lords of Mexico, made war against the Otomites and conquered them; the emperor of Mexico gave an asylum to the fugitives. Acamapichtli, king of the Tenuchcas, took also possession of the kingdom of the Culhuas under frivolous pretences. Both he and his

brother the lord of Tlatelulco died at the same time, after a reign of fifty-one years, according to the general history, which is my authority (viz. Don F. D'Alva's authority). The successor of Acamapichtli was Huitzilihuitzin, who, amongst other children, had Chimalpopoca and Itzcoatzin, both afterwards kings of Mexico. He died towards the end of the reign of Techotlalatzin, and had for successor his son Chimalpopoca, who had, amongst other sons, the first Montezuma, subsequently king of Mexico. Techotlalatzin died in 1357, after a reign of 104 years. The country was then divided amongst sixty-seven, or, according to another relation of Fernando D'Alva, between seventy-three lords, whose names and those of their respective districts are given in the said relation.

Ixtlilxcochitl, son of Techotlalatzin, succeeded him. Birth of his son Netzahualcoyotzin on the 28th of April, 1402, or 1 Acatl.* Civil wars. Tezozomoc, prince of Atzcaputzalco, claims the supremacy as grandson of Xolotl. Ixtlilxochitl defeated and killed on the 24th of September, 1418. In that war Tezozomoc was assisted by the sovereigns of Mexico and Tlatelulco. Netzahualcoyotzin was then fifteen years and two hundred days old. Tezozomoc dies the 24th of March, 1427, fourth day of the year 12 Acatl,† after a reign of 128 years. His younger son Maxtla usurps the crown and puts to death Chimalpopoca, king of Mexico and Tlacatcolzin, prince of Tlatelulco. After many adventures, Netzahualcoyotzin recovers the possession of Tezcuco on the 11th of August, 1427. On the ensuing year the Mexican kings, oppressed by Maxtla, called Netzahualcoyotzin to their assist-

* The year 1402 was 1 Tochtli, and not 1 Acatl; which last-mentioned year corresponds with 1415. Fernando D'Alva says that he died in 1462, aged seventy-one years. The year 1462 was 9 Tochtli, and he calls it 6 Tecpatl. He gives that king a reign of forty-two years, which, as well as his age, is inconsistent with every other of his dates.

† The year 1427 is 13 Acatl. It appears by this, that Fernando D'Alva was of opinion that the Mexican year commenced on 20th March, or with the spring equinox.

ance; and together they defeat Maxtla, who is killed, and overset the Tecpanec monarchy.

The sequel of Fernando d'Alva's history is that of the two great kings of Tezcuco, Netzahualcoyotzin and his son Netzahualpiltzintli, of the Spanish conquest, and of the adventures of Ixtlilxochitl, the last prince of Tezcuco and ally of Cortez. It may be seen, by the manner in which the events of the revolution of 1427 are related, and by the general tenor of his accounts of the preceding events, that he is as partial to his ancestors of Tezcuco, as the compilers of the Mexican collections were to their own country. He claims throughout for them the supremacy over all the other sovereigns of the country, and calls them emperors. He has even inserted in his history the account of a pretended expedition of the prince of Tezcuco, subsequent to the revolution of 1827, against Mexico, of the capture of that city, and of a tribute imposed upon it. It is not, however, the object of this inquiry to discuss the history of Mexico and Tezcuco, during the century which preceded the Spanish conquest, but only to examine what foundation there is for the dates and authenticity of the events said to have taken place prior to the fifteenth century.

The account given by Fernando D'Alva shows clearly that the knowledge of those events was not derived from any authentic painted records, kept at the time when the supposed events took place, but from a vague tradition disfigured by fables. Xolotl, who, when he arrived in the valley of Mexico had a son grown up, reigns afterwards 112 years. His son Nopaltzin, who was a young man in the year 963, dies 144 years later, in the year 1107. Quinantzin and Techotlalatzin reigned respectively 112 and 104 years. Tezozomoc dies in 1427, after a reign of 128 years: he had therefore succeeded his father and predecessor Aculhua, in the year 1299; and Aculhua, who arrived in the valley of Mexico in 1011, must have lived more than 300 years. Acama-

pichtli, brother of Tezozomoc, whose son was born before the year 1107, and who was made king of Mexico about the year 1141, dies about the year 1300, after a reign of 51 years. His son Huitzilhuitzin is born during the reign of Nopaltzin of Tezcuco, that is to say, between the years 1075 and 1107; and he dies towards the end of the reign of Techotlalatzin, who died in 1357.

Xolotl invades the country of Anahuac with an army of one million wild Chichimecs, without counting the women and children, or with about four millions of souls. That people, we are informed, planted nothing, lived exclusively on game and on the natural products of the earth, and did not apply to agriculture till more than one hundred years after. The country also which they invaded was a desert, abandoned by its former inhabitants, and which therefore could supply them with no provisions. Fernando D'Alva does not seem to have been aware of the fact, that ten thousand men could not be kept in a body ten days, if they had no other resource but the natural products of the earth. We know perfectly well the space of ground which is necessary to sustain a population of ten thousand Indians who have no agriculture.

It is also probable that he did not know that Xolotl is a mythological being. Sahagun does not mention him as one of the kings of the Chichimecs; but, in his 7th Book, chap. 2, page 249, we find Xolotl to have been, according to the Mexicans, a god who wanted to escape death, transformed himself successively into a species of maize, a species of maguey (mexolotl) and a fish (axolotl), and was killed by the god of air. He is also found, both in the Codex Vaticanus No. 3738, Plate 47, and in the Tellerianus, Plate 24, as one of the deities presiding over the sixteenth period of thirteen days: and he is described in both the interpretations as one of the seven who escaped from the flood, and as the god of monsters, of twins, and of things joined together. Baron de Humboldt has also recorded another tradition of Xolotl. (Note to Vol.

2d, p. 176, 8vo edition.) The progeny of the god *Citlalatonac*, and of the goddess *Citlalicue*, was a silex which broken produced 1600 subaltern gods, inhabitants of the earth. As they had no slaves to serve them, Xolotl, one of the said gods, brought from the lower regions a bone, which broken gave birth to mankind.*

Fernando D'Alva was evidently credulous and ignorant. He believed in the miraculous feeding of millions of people, without suspecting that, if true, it was miraculous, and he maintains seriously that, three hundred years before the time when he wrote, it was no unusual occurrence amongst his ancestors to attain the age of three hundred years. His principal object is to make those ancestors the sole legitimate emperors of the little world known to them. There he exaggerates and perhaps misrepresents. Yet he is free of some of the defects, growing out of a speculative hypothesis, which at different times have had an influence on the writings of Spanish and other foreign writers. Although he may have ascribed to the later kings of Tezcuco much more elevated and true notions of a Supreme Being, than they entertained, he does not insinuate that Christianity or Judaism had ever penetrated into America; and he does not attempt to identify St. Thomas with Quezalcoatl. Nor does he, as Boturini and some other modern writers, bring the Chichimecs, Alcohuas, and Atzécs directly from Asia into Mexico. That America was first peopled by Asiatic tribes is highly probable; but after the lapse of several thousand years, the memory of that ancient migration was lost. Asia was utterly unknown to the ancient Mexicans; they knew nothing of the world but what lay in their vicinity. The original seats of the Chichimecs were, as they thought, not far distant to the northwest; they placed the

* This last fable is remarkable. The nobility must have been the descendants of these one thousand six hundred gods, and the common people the issue of the broken bone. This reminds of the origin ascribed to the several castes of India.

Aztlan of the Atzecs not in some unknown remote country, but adjacent to Michoacan. According to Fernando D'Alva, these Atzecs were the descendants of ancient Toltecs who had fled to Aztlan, and who now returned to the country of their ancestors.

In one respect he differs from all the other authorities, when he asserts that the Chichimecs spoke a different language from the Acolhuas and other Mexican tribes. Independent of those authorities, the names of the earliest Chichimecs have Mexican terminations and appearance; Xolotl, his son Nopaltzin, and particularly his two daughters, Cuetlaxochitzin and Cihuaxochitl, whose names are evidently Mexican and derived from *Xochitl*, a flower.

Subsequent writers have attempted to reconcile the gross inconsistencies of Fernando D'Alva. The most remarkable are Veytia, who died before the year 1780, but whose ancient history of Mexico (which terminates about the year 1428) was only published in 1836, and the Jesuit Clavigero, who, driven from Mexico when his order was expelled from the Spanish dominions, retired to Italy, where he published, subsequent to the year 1780, his history of Mexico. His work is in every respect superior to that of Veytia; and he is much more cautious in his assertions. He assigns no special dates to the reigns of the kings of Tezcuco, before the 15th century. He considers the account of the army of a million of Chichimecs as incredible, and observes that it does not appear possible that so small a district could support a million of hunters. Veytia, on the contrary, increases the amount of Xolotl's followers to 3,210,000, of both sexes, without counting the children. And then, speaking of the food of the Chichimecs, he says that it consisted of the products of the chase, either quadrupeds or birds, and of the natural fruits and herbs of the fields, but that they sowed or cultivated nothing. It may however be admitted that even Veytia's history is more plausible and less inconsistent than that of Fernando D'Alva. But

he and Clavigero contradict each other; and their corrections, though they render the account more probable, are only conjectures founded on no apparent authentic authority. Both, in order to lessen the pretended duration of Xolotl's life, have substituted more recent dates for that assigned by D'Alva to his first arrival in the valley of Mexico, and have made various similar alterations in his history of Tezcuco. But it was impossible to reconcile his account of the kings of Mexico and of the Tecpanecs, with the history or legends of these; and Veytia and Clavigero were compelled to reject it almost altogether. Veytia has supposed therefore that there were two kings of Atzacapulco named Acolhua,* and that the Amacapichtli of Mexico was distinct from the Amacapichtli, son of Acolhua. The fact appears to be, that D'Alva, in his ardent desire to make the sovereigns of the Tecpanecs, Mexicans, Tlascallans, &c., to be descendants of his Xolotl, and subordinate to the princes of Tezcuco, has suggested genealogies altogether inconsistent with the laws of nature.

Both allude indeed, generally, to ancient paintings which have never been published, and the authority of which is not shown; but they do not appeal to any specific painting in support of any of their corrected dates; and it is impossible to distinguish in their historical statements, or in their chronology, between that which may have been deduced from such paintings or original records, and that which is either traditional or a mere conjecture.

* Still he gives to this second Acolhua a reign of one hundred and four years. Other writers count seven sovereigns between the first Acolhua and Tozozomoc. But the Tecpanecs themselves claimed a much higher antiquity, as stated by Veytia (Vol. II. pages 74 *et seq.*). And Baron Alexander de Humboldt brought from Mexico a painting representing the genealogy of the princes of Atzacapulco, which seems to sustain that opinion. It is not at all impossible that the Tecpanecs may have been a residue of the Toltecs, one of the tribes of that nation which had rebelled against the monarch and preserved its independence. It is admitted that there did not exist any regular chronological history of that nation. (*Veytia, ut supra.*)

Clavigero, when speaking generally of the writers on whose authority he relied, says that* "Fernando D'Alva Ixtlilxochitl was so cautious in writing, that, in order to remove any grounds for suspicion of fiction, he made his accounts conform exactly with the historical paintings, which he inherited from his illustrious ancestors." And yet, in the course of his history, he rejects the greater part of D'Alva's dates, and substitutes others, as being more consistent with common sense.

Don Fernando D'Alva asserts indeed that his relations are founded not only on songs composed by credible persons, but also on paintings and hieroglyphics, which are the true source of history, since they were written at the very time when the events occurred. He adds that there were writers for each species of work; some were charged with the annals, and arranged successively the events which occurred each year, with the dates of the month, day, and hour; whilst others were occupied with the genealogy, births, and deaths of the kings and lords. And then he says (1st vol. page 203), under the date of 1428, "Here ends the general history of the Chichimecs, the authors of which were Cemilhuitzan and Quauhquetzal: I will draw my subsequent relation from other historians and from the annals of New Spain." And (1st vol. page 355), at the end of the reign of Netzahualcoyotzin, he says: "For all I have said of this prince I rely principally on the testimony of two Mexican princes, Itzcoatzin and Xiuhcozcatzin,† and of the other poets and historians, who have written the annals of the three dynasties of New Spain,

* Clavigero, English translation, American edition, Richmond, 1806, Vol. I. page 21.

† In the first sentence of his work, Fernando D'Alva mentions Xiuhcozcatzin as a respectable historian, and makes him son of king Huitzilihuitzin, who died more than one hundred and fifty years before the death of Netzahualcoyotzin.

only one of the Mexican kings. Gama has demonstrated, by the calculation of the eclipse of 1481, that Tizoc was crowned in the month of June of that year. Siguenza, who alone gives the true year, places the event in the month of September. The year 1482 is given in Mendoza's collection; and 1483, in both the Codex Vaticanus and the Tellerianus. A mistake of two years in the date of an event so plain and remarkable as that of the accession of a new king, and which took place less than forty years before the Spanish conquest, impairs confidence, and leaves it almost doubtful, whether we have any other authority but tradition for any date whatever. Those assigned (or omitted) in the paintings to the eclipses seem to confirm those doubts. There is in those paintings but one eclipse recorded between the year 1426 and 1496. It is there stated to have occurred in 1476. Gama has ascertained that there was no eclipse visible at Mexico that year; and, on the other hand, the great eclipses of 1777 and of 1781 are altogether omitted in the Codex; or that of 1477 is recorded as having occurred in 1476.

If the difference of dates between the several authors, even for the events which took place within one hundred years before the Spanish conquest, throws some doubts on the authenticity of the documents from which they were derived, there can be no doubt with respect to more ancient times. It is evident that the accounts given by the several authors are not derived from any contemporaneous historical records, and are purely traditional. Facts may be misunderstood, or misrepresented by contemporaneous writers. But men who keep a diary, Priests charged with the care of recording facts, as they occur, cannot be mistaken as to the dates of such plain and simple facts as the death of a king, and the accession of his successor, which take place in their own town, and under their eyes. When, therefore, we find that no two authors agree in that respect, and that the differences exceed fifty, and occasionally one hundred years; we may safely conclude

that, within a few years after the conquest, there did not exist a single original historical painting, in which events prior to the fifteenth century were faithfully recorded under their proper date.

If, at the time after the conquest, when Mendoza's collection and the Codex Tellerianus were compiled, or when some Indians first wrote histories of their country with our characters, there had existed one or more authentic painted chronological records contemporaneous with the events recorded, the discrepancies of dates in those compilations and histories could not have occurred. On the other hand, it cannot be doubted, that paintings or fragments of paintings had escaped destruction, which represented some actual events, without specifying the date, or some legendary traditions believed to be true. The Berlin fragment, brought by Alexander de Humboldt, which represents a war, without designation of time or nation, is of that character; another in the possession of M. Waldek, mentioned by M. Ternaux-Compans, and several of those enumerated in Boturini's collection, seem to belong to that class. It is impossible to form a correct judgment of the value of those which have never been published. They might have assisted inquirers of a more discriminating mind than Fernando D'Alva; but it must be recollected that an insulated painting may represent a legendary fable as well as an historical event; and that though it may corroborate, it is not alone sufficient to establish the truth of the fact.

Although it appears certain that, either the Mexicans had not any chronological ancient records, or that, if any such ever did exist, they were irretrievably lost within a short time after the Spanish conquest, it does not follow that tradition, including legendary songs, should be indiscriminately rejected. The general outlines of a rational, consistent, and universally received tradition are propably true, though the dates may be absurd, and the details very doubtful.

The commencement of the great Mexican monarchy as-

cends no higher than about ninety years prior to the arrival of the Spaniards. It is the time when the princes of Mexico and Tezcuco acquired the supremacy over the other petty sovereignties of the valley of Mexico, emerged from its limits, and began their conquests over the adjacent regions. A period of uncertain duration, probably about three hundred years, had preceded, during which our knowledge of events, such as it is, is confined to the establishment in the valley of Mexico and its vicinity, and to the petty internal wars of the Acolhuas or Tezcucans, the Tecpanecs, the Atzecs or Mexicans proper, the Chalcas, the Tlascallans, the Cholulans and those of Huexotzinco, all of the same stock, and speaking the same language. All these tribes, including the Chichimecs, whose name merged into that of Acolhuas, appear to have come from adjacent northern countries, shortly after the dissolution or dismemberment of the extensive and powerful monarchy of the Toltecs.

The universal tradition that this nation belonged to the same stock and spoke the same language as the Mexicans, and that their dominion extended at least as far as the limits of the empire of Montezuma, is confirmed by the existence, at the time of the Spanish conquest, of an ancient colony in Nicaragua, speaking the same language, and having other analogies with the Mexicans. We cannot assign any precise date to the termination of that monarchy, which took place, according to Fernando D'Alva, in the year 958, according to Sahagun in the beginning of the thirteenth century, whilst Clavigero assigns the date of 1051, and Bustamente that of 1116. From the traditional accounts, it would seem, that this event was caused by internal dissensions, rather than by any external conquests. It seems probable, and is consistent with the tradition of the colony found at Nicaragua, that the Toltecs had, as the Mexicans afterwards, extended their dominions towards the south over nations speaking different languages, which rebelled at a time when a civil war had broken

out amongst the Toltecs themselves. The total destruction of that nation, such, that none remained, besides the fugitives to Nicaragua, than a few thousand in the valley of Mexico appears almost incredible. Bustamente, in a note to Sahagun, ascribes this event to the rebellion of the petty princes (*Regulos*, Volume III., page 114) of Xalisco. This was the name given to the province lying north of Michoacan and of the Rio Grande de Santiago, the probable abode of the Chichimecs and Acolhuas. The various writers agree in assigning about four hundred years to the duration of their monarchy: they give the names of nine sovereigns, and a sketch of their history. Respecting all this, nothing is certain but the existence of their monarchy, that they built several of the ancient monuments of Mexico, and that they were an agricultural and populous nation. It seems also probable, from the accounts of the Mexicans, that they had made considerable progress in the arts and in the knowledge of the length of the year. It is quite idle to try to fix dates; and the details of their history are either pure inventions, or rest exclusively on vague tradition. We are repeatedly referred to books and annals; and facts are stated as positively, as if they were derived from contemporaneous writers. No ancient writings could exist but paintings of the same character with those we have in reference to the recent Mexican history. No such original painting of a date corresponding with the period of the Toltec monarchy has ever been produced; and it may be doubted whether any such was in existence at the time of the Spanish conquest.

Prior to the Toltec monarchy, the name of another nation, the Olmeques, has been preserved; and the erection of the pyramid of Chollula and of some other ancient monuments is ascribed to them. This is purely traditional; and whether they spoke a different language from the Toltecs is not suggested. This is also the epoch of Quesalcoatl, the Prophet God, whom Sahagun believed to have been a Toltec. Tra-

dition ascends no higher: it has indeed preserved the recollection of the flood; but all the residue is a blank, which the Mexican priests have filled with mythological fables. Subsequent to the Spanish conquest, imaginative writers attempted to identify Quesalcoatl with the Apostle St. Thomas: whilst others thought that they discovered, in the ancient mythological paintings, allusions to the fall of man and to some of the other events recorded in the Scripture.

Boturini was a most enthusiastic and successful collector of ancient paintings and of early manuscripts. He was most unjustly persecuted; and the loss of his collection is much to be regretted; but he carries his credulity and extravagant conjectures beyond all bounds. He deduces from Indian records the date of the Creation;* and, assuming as a certain fact that the Babel confusion of languages occurred in the year 1 Tecpatl, he corrects the previous chronological systems, and demonstrates that this event took place 217 years after the Flood, according to the Hebrew text, and 255 years according to the Septuagint. (Pages 120–124.)

It is obvious that this and other similar extraordinary assertions had their origin in the oral, or written statements of the early converted Indians, who pretended to have found in their fictitious annals a corroboration of the scriptural chronology. The greater part of the information respecting the Toltec and Mexican history, which has been communicated by Sahagun and Torquemada, was derived from the same

* No hay Nacion Gentilica, que refiera las cosas primitivas á punto fixo como la Indiana. Nos lá razon de la Creacion del Mundo, del Diluvio, de la confusion de las lenguas en la Torre de Babél, de los demas Periodos, y Edades del Mundo, de las largas Peregrinaciones, que tuvieron sus gentes en el Asia, con anos especificos en sus caracteres; y en el de siete *Conejos* nos acuerda el grande Eclypse, que acontecio en la muerte de Christo nuestro Senor; y los Indios primeros Christianos, que entonces entendian perfectamente su Chronologia, y estudiaron con toda curiosidad en la nuestra, nos dexaron la noticia, como desde la Creacion del Mundo, hasta el dichoso Nacimiento de Christo, havian passado 5199 años, que es la misma opinion, ó computo de los LXX.

source. How sober Sahagun is in his historical notices, and how meagre the information derived from the historical paintings which have been preserved, has already been adverted to. It is not intended to discuss the degree of credence to which the further details, given by Fernando D'Alva and Clavigero, respecting the events subsequent to, or immediately preceding the revolution of 1427, are entitled. But it is astonishing that intelligent and well informed writers, such as Clavigero and Carlos Bustamente, should have supposed, that it was possible to assign precise dates to the commencement and dismemberment, and to write an authentic history of the Toltec monarchy. We know nothing of the history of barbarous, prior to the time when they come in contact with civilized nations. What do we know of the internal history of Gaul or Britain before the Roman invasion, of that of Russia or Scandinavia before the tenth century? It may indeed be admitted that the imperfect system of writing of the Mexicans enabled them to record dates and names, and to give graphic descriptions of some facts. But there is not a shadow of proof that any of such ancient date were in existence at the time of Sahagun, or when the earliest Indian authors wrote with our characters.

Of a civilization, much more ancient than the Mexican and Tezcucan dynasties, there can be no doubt. The memory was preserved of the dismemberment of an ancient monarchy as extensive as that of the Mexicans, and founded by a people of the same language and family. The monuments still existing, which the Mexicans themselves ascribed to their predecessors, or to some more ancient nation, and the numerous ruins of ancient cities, beyond the limits of Montezuma's empire, are speaking and irrecusable evidences of that ancient civilization, the date of which is unknown to us. The comparative dilapidated state of those ruins indicates rather the time when they were abandoned, than that of their foundation: and if ruins of such magnitude have not been discovered in the vicinity of the Pacific Ocean, between the northern parts

of Guatimala and Costarica, it may be ascribed to the geological character of that region: a series, through its whole length, of volcanoes, where the frequency of earthquakes discouraged the erection of stone temples and palaces.

The empire of Montezuma was inhabited by several distinct nations, speaking different languages. These appear by the relations of the Spanish conquerors to have attained a similar degree of civilization: and the ruins of cities, as far east as Copan in the State of Honduras, as well as the Yucatan calendar, corroborate the opinion. The account of the successive conquests of the Mexicans, recorded in Mendoza's collection and the Codex Tellerianus, shows that, with few exceptions, almost every town or district (pueblo) was an independent community; and such also had previously been the organization of the valley of Mexico. In that state of things, perpetual wars and frequent revolutions must have taken place. But we have not a single document, either prior to the Spanish conquest, or written by Indians subsequent to that event, which relates to any nation within the Mexican empire which did not speak the Mexican language.

Of the ancient history of Central America we know still less. There is indeed a fabulous history of the kingdom of Quiche, written, it seems, by a descendant of the sovereigns of that country, preserved by Fuentes, and the summary of which will be found in Mr. Stephens's Incidents of Travel. That kingdom appears to have been the only one of any importance in that region. The residue of the country seems to have been divided into small communities,* and to have opposed little or no resistance to the Spanish conquerors, who invaded it from Mexico and from Panama. There is, how-

* See, in M. Ternaux-Compan's collection, the petition of the Indian chiefs of Atitlan to king Philip II. (1571). They say that their former sovereigns had the supremacy over several villages and districts, and were at war with three other kingdoms, Tecpanutlatlan, Tepanguatimala, and Tepantecoictlan. They were also at war with the Quiches.

ever, an exception. The Cacique, as he is called, of Copan was not subdued till many years later, and after a stout resistance. It may be observed, that the ruins of the city of that name and their position do not at all agree with the localities of the severe battle which decided the contest. There is not a single standing building either at Copan or at Quiroga; and there is every appearance of these places having been abandoned long before the Spanish conquest.

The Indian manuscript communicated by Don J. P. Perez to Mr. Stephens, and inserted in the appendix to the second volume of his Travels in Yucatan, contains all the knowledge which we have of the history and chronology of that country, according to the Indian legends and traditions. To ascertain dates with any degree of precision, for remote events, is out of question. But it is probable that the principal successive events are stated in conformity with their respective order.

We learn that the Yucatecs gave the name of Talapan* to the country from which they came, and that the true Indian name of the province erroneously called Yucatan by the Spaniards, was *Chacnouitan*. And we are told that their first settlements were in the province of Bacalar, and afterwards at Chichen Itza. This they called the *discovery* of both those places. In order to understand the true meaning of the expression *discovery*, it is necessary to advert to the particular topography or geology of Yucatan.

The province of Bacalar is situated near the eastern shores of Yucatan, on the waters of the Rio Hondo and of other smaller streams which empty into the bay of Espirito Santo, between the eighteenth and nineteenth degrees of latitude. Nearly under the same latitude, and on the western shore of Yucatan, the Rio Palisada, the most easterly branch of the delta of the great river Usamasinta, empties itself into the lake of Terminos. North of the nineteenth parallel of lati-

* The Tlapanec language, spoken at Tlapa, lat. about 17°, long. about 99° from Greenwich, should be compared with the Maya.

tude, all the streams that empty into the sea, whether on the western, northern, or eastern shores of Yucatan, penetrate but few miles inland. Throughout the interior of the whole province there is no permanent running stream. This want of running water is supplied by those conical excavations, called Sonatas, at the bottom of which, and sometimes at the depth of two hundred feet and more, are found large reservoirs of water. Settlements could at first be made only in the vicinity of those reservoirs. They have been enlarged, or their access rendered more easy; and subsequently wells were dug and rain water was collected in cisterns. When the country was first inhabited, to find a Sonata was a true discovery. The word Chichen means the mouth of the well;* and the Sonata may still be seen near the magnificent ruins of that ancient city.

The next fact mentioned is the migration of the nation, or of a portion of it, to Champoton, where the Ytzaes, holy men, had houses. Whether these holy men came from abroad, and brought with them their religious rites, and perhaps their calendar, does not appear. Champoton is said to have been abandoned in the beginning of the twelfth century.

We find the principal settlements of the Yucatecs in the middle of the same century to have been at Uxmal, Chichen, and Mayapan, under distinct princes, who seem to have remained more than two centuries at peace under a kind of central government, the seat of which was at Mayapan. It is then stated that civil wars began in the tenth year of the 8th Ajau, which corresponds with the year of our Lord 1402. We might expect this to be the beginning of truly historical times. But the same confusion is found in the subsequent dates given in the manuscript. All that can be collected is, that Mayapan was destroyed, and the central government

* The name of the Chichimecs is said by some to be derived from a city called Chichen. There is no town of that name but that in Yucatan, and the word is clearly Maya and not Mexican.

overset about sixty years prior to the arrival of the Spaniards, which is there stated to have taken place before the termination of the 11th Ajau, corresponding with our year 1536. But it may be that the sixty years above stated may refer to the year 1517, when the Spaniards under Grijalva made their first appearance on the coast of Yucatan. At the time of the conquest, the country appears to have been divided into several petty sovereignties, at war one with the other, but which still made a stout resistance against the invaders. Human sacrifices are mentioned; yet the religious worship seems to have been less ferocious than in Mexico.

A remarkable feature distinguishes Yucatan. It was inhabited, when discovered by the Spaniards, by a single Indian nation, speaking but one language which, as has already been stated, was also spoken at Tobasco, and has a near affinity with the various dialects of Guatimala. The general want of water must have rendered the peopling of Yucatan more difficult and slower than that of Guatimala; and the tradition, that Bacalar was the first place settled, confirms the probability, that the Yucatecs were a colony, and the Maya one of the dialects of Guatimala.

From the affinity between the Maya and the language of Huesteca, I will not venture to draw any inference; and it is proper to observe that the character of the pyramid of Papantla, and of the other monuments lately discovered in the vicinity of the Rio Panuco, is more similar to that of the most ancient monuments of Mexico than to that of the temples and palaces of Yucatan.

The style of the sculpture and ornamental architecture of the edifices of Mitla in Oaxaca, of Palenque, and of Yucatan, appears superior to that of the Mexican monuments; and there is a far greater number of buildings in a tolerable state of preservation in Yucatan than in Mexico. This last circumstance is accounted for by the fact, that the Spaniards in Mexico almost universally occupied the sites of the Indian

towns, which they utterly destroyed and on their ruins erected new cities. There is the fullest evidence of the fact, with respect to the city of Mexico and several other places. The same thing indeed happened in Yucatan under similar circumstances. At Merida, the vestiges of the ancient Indian buildings are found under ground in the cellars of a convent. Chichen was inhabited at the time of the conquest; and had the Spaniards selected this for the site of their city of Valladolid, a few leagues distant, it is highly probable that not a vestige of the ancient edifices would now be seen.* Still the number of ruined towns discovered and visited by Mr. Stephens is extraordinary. It proves beyond a doubt that, at least during the period which preceded the destruction of their central government and their civil wars, Yucatan was the seat of a numerous and industrious, though perhaps enslaved population. The splendid temples and palaces still standing attest the power of the priests and of the nobles; no trace remains of the huts in which dwelt the mass of the nation.

SECTION V.

CONJECTURES ON THE ORIGIN OF AMERICAN CIVILIZATION.

It is not intended to discuss at large the question, whence the first inhabitants of America originally came, farther than to observe, that all the probabilities point out Asia.

First: The physical type of the Americans, either in reference to color and other external appearances, or as regards the shape of the skull, the facial angle and other ana-

* It appears by a curious map and document presented by Mr. Stephens to the Historical Society of New-York, that Uxmal was inhabited subsequent to the conquest.

tomical characteristics, is more similar to that of the Eastern Asiatics than to that of the inhabitants of any other portion of the globe. The white man and the negro are the two extreme races. Between these there are numerous varieties. Even in America there are differences, at least of color; but the general and more permanent characteristics are the same. It is not intended to assert that this American type is precisely the same as that of any Asiatic tribe. But it is well known, that at least color and other subordinate external appearances are modified and altered by climate, localities, and the state of society. In some parts of India, the Brahmin unites to the darkest hue the features and anatomical structure of the white man. All that is contended for is, that unless it be pretended that the Americans are the offspring of a distinct creation, it is far more probable that they should be the descendants of people, whose physical type is the most similar to theirs, than of nations in that respect of a totally different character. Of the countries on the Atlantic Ocean, opposite to America, the northern portion, including not only Europe, but also in the furthest recesses of the Mediterranean Sea, Western Asia and Egypt, has from time immemorial been occupied by the white man; and the African coast is the Negro land. It is only on the eastern shores of Asia, opposite to the western coast of America, that, from the most northeastern extremities of Tartary to the Malayan peninsula, we find those intermediate races, which bear the greatest similarity to the ancient inhabitants of America.

Secondly: The proximity, or rather, the greater facility of communication is also in favor of Asia. All the ancient discoveries were the result of coasting voyages, or made step by step, with the aid of intervening islands. The obstacles which Columbus had to encounter, both before and during his voyage, show that the boldness of his enterprise consisted in daring to brave the terrors of an unknown and apparently boundless ocean. Had he not been fortunately deceived by

the false position, at that time assigned to the eastern extremities of Kathai and Cipango; had he known the true distance between the shores of Portugal and those of China; ignorant as he was of the great intervening continent, his courage and enthusiasm might perhaps have been equal to the enterprise; but he would have found neither protectors nor companions. Most of the islands of the Pacific Ocean between the tropics have been peopled by Malay colonies, which, in canoes or pirogues, though sailing against the wind, have successively occupied those islands.* The communication between north-eastern Asia and the northwest coast of America is far more easy and practicable, not only across Behring's Straits, but still more so, by the two almost continuous chains of islands, the Kurile which extend from Japan to Kamtchatska, and the Aleutian which unite Kamtchatska to the peninsula of Alasca, in about the 55th degree of north latitude. It is true that the Northmen, the boldest navigators of their age, after having by a similar process reached successively the Shetland and Faro islands, Iceland and Greenland, did ultimately discover America proper, near five hundred years before Columbus. And it may perhaps be suggested, that a similar voyage was performed three thousand years earlier by their ancestors, and that America was peopled from that quarter. In the total absence of positive facts, this is a question of probability; and all that is contended for is, that the migration from Asia is much more probable than from Scandinavia, or than the accident of some Phœnician vessel being driven by a storm to the American shores.

* This colonization is of a date so comparatively recent, that the Malay origin of the inhabitants of Otahiti and the Sandwich Islands was immediately recognized when their vocabularies were first brought to Europe. It seems probable that some of these people may have reached the main-land of America; but they found the country inhabited, and either were killed or became mixed with the ancient inhabitants. No trace of the Malay language is found on the western shores of America.

It might be added, that the most striking points of resemblance, which have been observed between the Americans and the inhabitants of the other hemisphere, refer almost exclusively to Asiatic countries; but these analogies will be examined separately.

Philology has not as yet enabled us to draw any positive inferences on this subject; nor is it probable that vocabularies alone can throw any light upon it. There are probably more than one hundred languages in America, which, though similar in their structure and grammatical forms, are altogether dissimilar in their words. Accidental coincidences of sound and meaning must occur between some of these, and those of other languages. But it seems to me, that it is only in a comparison of the general structure and character of the American languages with those of other countries, that we may hope to find a similitude indicative of a common origin. Our knowledge of the languages of northeastern Asia is as yet limited; I am but imperfectly acquainted with the result of later researches; and further investigations are necessary before any legitimate inference can be drawn.

From whatever quarter America may have been peopled, the first important question is that of the time at which that event must have taken place.

We find in America more than one hundred languages which, however similar in structure, differ entirely in their vocabulary, or words. This difference must have originated either before or after America was inhabited. The first supposition implies that of America having been settled, not by a few distinct nations, which is very possible, but by more than one hundred distinct tribes and nations, of different origin, and speaking entirely different languages. This supposition, so utterly improbable in itself, is moreover inconsistent with the great similarity, in their physical type and the structure of their languages, between almost all the several nations and tribes which inhabited America when discovered in modern

times by the Europeans. If, as is highly probable, the prodigious subdivision of languages took place in America, after making every allowance for the greater changes to which unwritten languages are liable, and for the necessary subdivision of nations, in the hunter state, into separate communities; yet, for producing such radical diversity and great multiplication of languages, we want the longest time that we are permitted to assume. There is the highest probability, that America was inhabited, at a date as early as is consistent with the laws which govern the multiplication of the human species, and with the time necessary for the spreading of men to the extreme shores of the other hemisphere.

In order to have clear notions on that subject, it must be recollected, that the ratio of increase is, at the end of ten successive periods of duplication, as one to more than one thousand, and, at the end of twenty such periods, as one to more than one million. If mankind had from the beginning increased at the rate of one to two in twenty years, and had continued to increase at the same rate during twenty-five successive periods of twenty years, the living posterity of six persons would at the end of five hundred years have amounted to near two hundred millions. That supposition is quite within bounds, provided the means of subsistence increased at the same rate. We do know, from the recent history of our Western States, that the increase of agricultural products, or means of subsistence, is much greater during the first stages of an agricultural people, than the natural growth of its population. It is equally well known, that ultimately the progressive increase of population is checked by the want of a proportionate increase of the agricultural products. The same principle applies to those tribes which, abandoning agriculture, have fallen into the hunter state; with this great difference that, when not impeded by previous occupiers of the soil, their spreading over a great extent of country must have been much more rapid, for the plain reason, that they wanted much

more space in order to find means of subsistence. If at the beginning of the seventeenth century, America had been entirely destitute of inhabitants, and had been peopled exclusively by emigrants from the British dominions, their descendants would, before this time, have explored and made partial settlements in every part of this extensive continent. Counteracting causes must have occasionally impeded the progress of erratic wanderers. But, after making every proper allowance, I cannot see any possible reason that should have prevented those, who after the dispersion of mankind moved towards the east and northeast, from having reached the extremities of Asia, and passed over to America, within five hundred years after the flood. However small may have been the number of those first emigrants, an equal number of years would have been more than sufficient to occupy, in their own way, every part of America.

I beg leave once more to repeat that, unless we suppose that which we have no right to do, a second miraculous interposition of Providence in America, the prodigious number of American languages, totally dissimilar in their vocabularies, demonstrates not only that the first peopling of America took place at the earliest date which we are permitted to assume; but also that the great mass of the existing Indian nations are the descendants of the first emigrants; since we must otherwise suppose that America was peopled by one hundred different tribes, speaking languages totally dissimilar in their words.

At whatever time migrations may have taken place or been attempted, and whether, under the inhospitable clime of Behring's Straits, or by the successive occupation of the chain of Islands, which extends from Kamtchatka to the continent of America, each such migration must have consisted of few people. It was not the barbaric invasion of a whole nation, but, in every case, the landing, perhaps accidental, of a few persons in a frail canoe. After the first emigrants had ob-

tained a solid footing in the continent, and when the increase of population required it, they spread over the land as their ancestors had done in Asia. But they would not abandon their first settlements; and as the places of landing, either from islands or across Behring's Straits, were but few, after these had been fully occupied, new emigrants, still but few at a time, were not, if belonging to another nation, likely to receive an hospitable reception from the old inhabitants. Some mixture of tribes may have taken place in the earliest stages of the colonization of America. But after the whole country had been occupied, to the same extent and in the same manner as it now is, or was fifty years ago, by the savages of the northwest coast of America, all emigrants of a subsequent date must have been cut off by the natives, or been merged into the tribe which occupied the part of the country where they landed.

It is a certain fact that the greater part of North and South America was, at the end of the fifteenth century, inhabited by a scattered population, consisting of a multitude of small tribes, in the rudest possible state, without agriculture, living on the natural products of the earth, and who had not made the slightest advance in any species of knowledge, or indeed in any art, beyond those which were absolutely necessary for their existence. On the other hand, several populous agricultural nations were found between the Tropics, with regular forms of government, a systematic though detestable religious worship, laws for the punishment of crimes and for the protection and descent of property, a division of labor and of trades, a commercial intercourse, and a currency. They were dressed in cotton cloth, lived in large cities, had erected durable and ornamented temples and palaces, and made great progress, not only in architecture and sculpture, but in jewelry and several other arts. Some of them had an imperfect species of writing or painting, principally graphic, partly sym-

bolic, observed and recorded celestial phenomena, and had acquired considerable astronomical knowledge.

Was this civilization of domestic or of foreign origin? Had those civilized nations another origin than the other American tribes? and, if of the same family and stock, did they receive their knowledge from a foreign quarter, or did it naturally and gradually grow amongst themselves, without any foreign assistance? This is the most interesting problem of the obscure and, it may be said, unknown antiquities of America. It involves two most important questions in the history of man: that of the presumed inferiority of some races; and whether savage tribes can, of themselves, and without any foreign assistance, emerge from the rudest and lowest social state, and gradually attain even the highest degree of civilization known to us. If only a certain portion of mankind has reached that point, and even supposing an indelible inferiority of the red to the white race, it is at least certain that the Mexicans and the Peruvians had faculties sufficient to acquire the degree of knowledge and civilization which they possessed prior to the Spanish conquest. If we ascend to the first stages of man's existence, though we may believe that the beneficent Creator gave him something more than his bare faculties, probably an elementary language; yet it is most certain that man has in the main been left to his own resources, and that the whole mass of his present knowledge and acquirements is the result of a progressive accumulation, and of the gradual development of his faculties. This, if correct, would only show the possibility of a similar progressive improvement in America; but the question of fact, in the total absence of historical documents, is one of probabilities and conjectures.

It has been shown that America was most probably peopled, and the whole of it occupied, at a very early date. This first migration must have taken place at a time when, and from quarters where, men were probably no farther advanced

in knowledge than our northern Indians. Many tribes in the northeastern parts of Asia are at this time in that situation. At all events, whatever superior knowledge these first emigrants may have possessed, it was soon lost. Along the whole western coast of America, from the southern cape of California to Behring's Straits, there was no agriculture whatever. All the Indians west of the Rocky Mountains, without a single exception, derived their means of subsistence from the natural products of the earth, hunting, fishing, and native roots or fruits. There might be some variety in the degree of ingenuity displayed in their dress, ornaments, and tools: the tribes between Fuca's Straits and Norfolk Sound, appear to have had some superiority in that respect over those north and south of them: but there was nowhere any approximation to the Mexican civilization. It appears certain that, if this civilization was not the result of the natural progress of some American tribes placed under more favorable circumstances, if the arts and knowledge of the Mexicans and other semi-civilized American nations were communicated to them by emigrants from other countries, this must have taken place at a comparatively recent date and long after the first peopling of America. I do not feel competent to the task of investigating the subject under all its aspects; and I will confine my observations to two points: astronomical knowledge, and agriculture.

It has been shown that the Mexicans had ascertained that the length of the solar year was about 365 days and a quarter; that their common year consisted of eighteen months of twenty days each, and five supplementary days; that at the end of every fifty-two years they intercalated thirteen days, a process equivalent in its result to our addition of one day every four years; and that therefore their calendar was substantially the same, as that used by us prior to the Gregorian reform of the sixteenth century. It has also been seen that, in their first attempts to compute time, they did not, like most

other nations, begin with lunar months, or by any other period of days apparently corresponding with any celestial phenomena; but that they had adopted months of twenty days, and a shorter period of thirteen days; and that they resorted to a combination of those two series for the purpose of distinguishing the several days of the year. Finally, it has been demonstrated by the irrecusable testimony of the great Calendar Stone, that they had ascertained, with a considerable degree of precision, the dates of the six principal phenomena of the apparent motion of the sun, the two solstices, the two equinoxes, and the two passages of the sun by the zenith of the city of Mexico. It must also be recollected that, in connexion with those dates, the same monument exhibits a reference to the mythological fable of the fictitious ages of the world.

Baron Humboldt has, with his usual sagacity and most extensive and varied learning, collected and pointed out the various facts and analogies, in reference to this branch of the subject, which may be adduced in favor of the opinion that the astronomical knowledge of the Mexicans was communicated to them by foreign, probably Asiatic nations. In referring to works of such universal circulation, it is sufficient to indicate the most important of those analogies.

1. The singular and perpetual resort of the Mexicans, and other nations belonging to the same group, to the combination of two or more series, for the purpose of distinguishing days or dates. The same system is found in Thibet, China, and other Asiatic countries. 2. The most singular coincidence between the names given by the Mexicans to many of the days of their months, and those given by the inhabitants of Thibet to the signs or constellations of the zodiac. 3. The fable of certain successive ages, or creations and destructions of the world, prior to this which now exists, or at least before the flood. This extraordinary and not at all natural invention is also one of the dogmas of the Hindoos. I do not count,

amongst the analogies the opinion so generally spread among the Indians, either of North or South America, that mankind had been destroyed by a dreadful catastrophe, generally ascribed to a flood or inundation. This appears to me to be an indelible recollection of that event, transmitted by tradition.

The same writer has, with a conscientious love of truth, pointed out some of the special peculiarities which distinguish the Mexican calendar, and cannot be ascribed to a foreign origin. Such is the fact, that there is no trace that the Mexicans ever counted by lunar months; and such are the singular periods and series of twenty and thirteen days.

In a sincere research for truth, all well ascertained facts and their legitimate inferences, be they what they may, must be admitted. It is not by any means intended to lessen the weight of the analogies above stated, or of any other which may be pointed out. It will even be observed, that these peculiarities of the Mexican calendar do not appear to me to militate against the supposition of an imported astronomical knowledge. The primitive computation of time by months of twenty days, which was derived from the vigintesimal arithmetic of the Mexicans, and by a period of thirteen days, which may or may not have been derived from some appearances of the moon, appears to be of much more ancient date than the introduction of astronomical knowledge; since the celebrated religious period of two hundred and sixty days, formed by a combination of these two series, and proved to have always been used for the purpose of regulating feasts and other religious rites, has no connection whatever with the duration of the solar year.*

The reasons which may be alleged in favor of the domestic origin of the astronomical knowledge possessed by the Mexicans, will now be stated.

The Peruvians had so far ascertained the length of the solar year as to know that it was equal to about 365 days.

* See for more details on that subject the Appendix No. 2.

They did not derive their primitive division of time from the Mexicans. Their first computation was by lunar months, alternately of twenty-nine and thirty days, twelve of which made a year of three hundred and fifty-four days; and to these the Incas, who united the temporal and spiritual power, added, by an annual decree, eleven days unequally distributed amongst the twelve months. There is no evidence that they made any nearer approximation towards the true length of the solar year. The intricate calendar of the Muyscas, as described by Baron de Humboldt, is still more imperfect. Yet both, and particulatly that of Peru, afford indubitable proofs, not only of astronomical observations, and of a certain degree of astronomical knowledge, but also that their origin was independent of that of the Mexicans. If both the Peruvian and Mexican calendars were not the result of their own independent observations, we must suppose a double importation of astronomical knowledge, one to Peru and another to Mexico, coming from two different quarters, and by people possessed of different degrees of knowledge. There is not in Peru any trace of identity of the names of the days, or of a resort to a combination of two series. Whether they had the fable of the four ages of the world I cannot say. To admit that the Peruvian knowledge was not imported, would be giving up the question: for it may easily be shown that a longer series of observations would have necessarily led to a nearer approximation of the length of the year, and to a discovery of all that the Mexicans knew on that subject.

The knowledge of the days of the two transits of the sun by the zenith of the city of Mexico, must have been the result of recent observations made in that city. But the notion of making such observations could have originated only in countries situated between the Tropics. It never could have been thought of in Thibet, or any other part of central or northern Asia. If imported from that quarter of the globe, all the countries from which migrations to America seem most

probable are excluded. It may however be said that this class of observations may belong to the Mexicans, but that they never would have thought of it, had they not been previously instructed in other respects, and taught to observe by emigrants from the other hemisphere. Another fact connected with this branch of the subject must not be forgotten. The Mexican year commenced with the winter solstice; that of the inhabitants of Yucatan with the passage of the sun by the zenith.

The Mexicans at first computed time in a manner peculiar to themselves, and altogether unconnected either with the lunations of the moon, or with the apparent annual motion of the sun. They subsequently adapted this method to the knowledge they acquired of the length of the solar year; and the evidence of a natural progressive knowledge is clearly deduced from the omission in their calendars of both the five supplementary days of the year which belong to no month, are called empty and designated as fatal, and of the thirteen days intercalated at the end of the cycle, and belonging to no year. In this we have the proof that, instead of a sudden influx of imported knowledge, the Mexicans had at first an approximate solar year of three hundred and sixty days, which by a progressive advance in knowledge they extended to 365, and ultimately to 365 days and a quarter.

In ancient times knowledge was not diffused amongst the many; and we have abundant proof, that that of astronomy was not only confined to a few, but in several countries designedly concealed from the mass of the nation, and used by the priestly order as an instrument of power. If we ascend to that ancient epoch when America was most probably first peopled, it is impossible; if we resort to a much more recent date, it is extremely improbable that the emigrants should have been astronomers. But if it be admitted, that they were sufficiently well informed men to have communicated that astronomical knowledge which the Mexicans were found to possess, why did they not bring also an alphabet, the art of working iron,

mills, wheel-barrows, a multitude of other common arts, which remained unknown to the Mexicans, and at least the seeds of rice, millet, wheat, or of some other grain cultivated in the countries whence they came? If coming from one where agriculture was unknown, it is not probable that they were much advanced in science. This view of the subject might be expanded. In order to form a correct opinion, it is necessary to take into consideration, not only what the Mexicans knew, but also that which they did not know.

It may be asked whether it was possible, that the Mexicans, ignorant as they were in many other respects, and apparently destitute of the necessary instruments, could have made observations sufficiently accurate to have attained results so nearly correct as they did. All the nations which made any observations, the Egyptians, the Chinese, the Chaldeans, appear to have ascertained, at a very early period, that the length of the solar year was about 365 days and a quarter. This seems to have been one of the earliest results of astronomical observations; and provided these were continued for a sufficient length of time, it seems impossible that this approximate length of the solar year should not have been discovered, however coarse the instruments used, and however imperfect the observations may have been.

Wherever men began to take notice of the apparent movement of the sun, it is impossible that they should not have perceived that it did rise at different points of the horizon, but that there were two extreme points beyond which it never went, and to which it returned periodically. It has been seen, that the object of the Mexicans was to begin the solar year with the winter solstice. It is therefore highly probable that the determination of the extreme point in the horizon, where the sun rises on that day, and the time which elapsed till its return to the same point, were the means by which they ascertained the length of the solar year. We know positively that this was the mode of proceeding of the

Peruvians, who do not however appear to have attained a nearer approximation of the length of the year than that of 365 days. Pillars still subsisted at Cuzco at the time of the conquest, placed at some distance from each other, and pointing to that extreme place in the horizon, where the sun rises at the time of the winter solstice.

I am not an astronomer, and never made any observation; and I must leave it to competent judges to determine the probable error of which their primitive mode of observing was susceptible. The distance between two trees one foot apart is perceptible at the distance of more than two hundred yards; and a ray of the sun, passing between two trees so situated, would be clearly seen by an observer standing at a still greater distance. An expert rifleman will, at the distance of one hundred yards, place the ball nine times out of ten within two inches from the centre of the object of his aim. But his skill and the perfection of his gun would be unavailing, if he had not the means of aiming with precision at the object. These means consist simply of two sights, one placed near the breech, and the other near the extremity of the rifle.

Substituting a straight stick with two such sights for the rifle, it seems to me that the extreme point in the horizon, where the sun rises, might be determined within one degree, by such simple means. But be the error to which such observation is liable what it may, repeated annual observations, or, which is the same thing, an observation at the distance of several years will correct and lessen the error, provided an account of the number of intervening days shall have been kept. Supposing, for instance, the error in the first observation to have been such, as to be equivalent to one of ten days in the presumed length of the year. An observation made ten years after, with the same means and without any improvement, either in the instrument used, or in the mode of observing, would be attended with the same error not exceeding ten days. But this error would be spread over ten years,

and, if on the same side, would give the length of the year within one day. The first observation would have given about 355 (or 375) days for the length of the year. At the end of ten solar years 3652 days and a fraction would have elapsed. The similar error of ten days in this observation, made at the end of the ten years, would give about 3642 days for that period, or a fraction more than 364 days for the length of the year. It is obvious, that it is only necessary that such observations should be continued during a sufficient number of years, in order to attain the approximation of 365 days and a quarter.

The day on which the sun rises at the summer solstice might be determined in the same manner. And as the time of the sun moving, from the winter to the summer solstice, is nearly equal to that from the summer to the winter solstice, the correspondence of these two observations might have led them to the supposition, that the two respective days of the equinox were also both equi-distant in time from the two solstices. It has, however, been seen that they had discovered that the sun employed more time, in moving from the spring to the autumnal, than from the autumnal to the spring equinox. It has been suggested that this discovery was effected, by observing the days when the sun did rise at a point due east on the horizon. We have, however, no proof of the mode by which they obtained an approximate knowledge of the equinoctial days.

There are certain holes in the edge of the outer cylinder of the great Calendar Stone, formerly belonging to the great temple of the Mexicans. These holes, which are perpendicular to the plane of the stone, are at the places designated in the annexed plate, by the letters X, Z, S, Y, and PP, QQ, which correspond nearly, though not precisely, with the subdivisions of the circumference at the eight points designated by the letter L. The astronomer Gama presumed that the stone was placed in a vertical position (the point T at the

top), facing precisely the south, and placed on and sustained by another large horizontal stone. And he showed, by a very ingenious process, that if gnomons or pins, of a certain relative length, were inserted in the holes X, Z, and S, Y, and threads were stretched, uniting respectively the extremities of the pins X, Z, and S, Y, the days on which the shadow of the thread X Z coincided with the shadow of the thread S Y, were those of the equinoxes. But this only shows that if the priests had previously known on what days the sun crossed the line, they might by the process suggested have observed those days. The relative length of the gnomons or pins depended on such previous knowledge; and this conjecture of Gama does not therefore show by what process they had acquired an approximate knowledge of the equinoctial days.

But he has shown very clearly how by an analogous process, the days, on which the sun passes by the zenith of the city of Mexico, were ascertained. For, if gnomons or pins, of equal length and perpendicular to the plane of the stone, were inserted in the holes P, P, Q, Q, and threads were stretched, uniting the extremities of the pins P and P, and also those of the pins Q and Q, the shadow of the thread P P must coincide with that of the thread Q Q, on the days of the transits of the sun by the zenith of the city of Mexico. Here, again, I must leave it to competent judges, to determine the error to which such observation was liable.

It has lately been discovered by Mr. Nebel, that the Mexicans resorted to another mode of ascertaining the time of the transit of the sun by the zenith, which reminds us of the Egyptian well of Syene. That gentleman found, in examining the pyramid of Xochicalco, twenty-five leagues south of Mexico, of which the lower story alone remains, that there was a vertical tube, or well, from the top to a dark room on the lower floor of the building. If we knew the relative length and diameter of that well, the error to which the observation was

iable might be calculated. Whatever this, or that of the method suggested by Gama may have been, observations continued during a sufficient number of years would also correct it, and lead to an approximate knowledge of the length of the solar year, such as the Mexicans did possess. The fact, that the Yucatanese began their year with the day of the transit of the sun by the zenith, on its return from the northern Tropic to the Equator, shows that they also made observations of the same kind.

It appears, on the whole, that there is no difficulty in understanding how the Mexicans and other semi-civilized nations of America, after they had once taken notice of the annual motion of the sun, had felt the want of a correct mode of computing time, and had first thought of making observations for that purpose, did attain that degree of astronomical knowledge which astonished the Spaniards. The great distinction is between those who make no observation whatever, and those who have begun to observe. That first and incipient step, which separates ignorancef rom knowledge, is the difficult transition. Once taken, the foundation of knowledge is laid; and however slow, or retarded by incidents, still a progressive improvement must take place. This observation applies not only to astronomy, but to all the arts, and to every species of knowledge which the Mexicans did possess.

Our Indians, and all other tribes in the same or a similar social state, count vaguely by moons and winters. But, whether a definite number of those moons correspond or not with the return of seasons, is a matter of perfect indifference to them. It is sufficient for them to know, that seasons regularly succeed each other and return again. Their wants do not require, that they should ascertain the numerical order of months or days, or that they should keep a record of years. Men must have emerged from the hunter state; they must have grown into populous communities, before they build temples and

palaces, and before their wants require, for civil or religious purposes, a correct division and measure of time, and gradually an adjustment of that measure with the solar year. Many centuries may have elapsed between the time, when the Mexicans first counted by months of twenty days, and that when they ascertained the length of the year and formed their cycles. But even at that early time, when they found it convenient to have a regular division of the time into periods of equal length, they must have been far in advance of our Indians in the road towards civilization.

What was, then, that first indispensable transition which withdrew a certain portion of the aborigines of America, from that state of barbarism and ignorance in which all the other tribes are still found? That it was the transition from the hunter to the agricultural state, no one can doubt. It is true that some of the tribes amongst whom agriculture was introduced are still savages; but not a single instance exists in America of a nation either populous, or to a certain extent civilized, which is not agricultural. It may be asked why the same cause did not produce every where the same effects? why, for instance, the introduction of agriculture amongst the Indians of the United States did not lead to a civilization somewhat similar to that of Mexico?

Population never can increase beyond the means of subsistence. The Americans, such as they were found in the sixteenth century by the Europeans, might, in that respect, be divided into three classes. 1st. Those tribes which lived exclusively on natural products, whether game, fish, or such vegetable products as could be obtained without the aid of any cultivation whatever. 2d. Agricultural nations, properly so called, which for their subsistence depended exclusively on agricultural products raised by their labor, and to whom game was, as it is to the most civilized nations, a mere supplementary article of luxury. 3d. Savage nations of the first class, amongst which agriculture had been partially introduced.

The pastoral state, so called, was entirely unknown in America; nor is there any trace or tradition of its having ever existed.* The partial introduction of agriculture amongst the Indians of the United States does not appear to have produced any considerable alteration in their habits and manners. The Miamis and the Mohicans could not boast of any great superiority over the Knistinaux and the northern Algonkins. There was not the slightest trace of agriculture amongst any of the tribes living west of the Stony Mountains, from Lower California to the Arctic Ocean; they are not more savage than our own Indians, and in no respect inferior in the few arts required by their wants. The effect on the increase of population was also very limited. This was the result of the pertinacity with which the Indians persisted in their habits, and above all in their indolence.

It is well known that the labors of the field were amongst our Indians thrown upon the women alone. A great portion of their time was necessarily employed in the domestic occupations which must always fall to their share; and the residue was unequal to the task of raising food adequate to the whole consumption of the nation. The proportion varied according to soil, climate, and the degree of assistance which, amongst some tribes, they occasionally received from the men. But it fell short every where of the amount required for the food of the whole tribe; and the result was, that after producing an increase of population proportionate to the additional supply, that increase was again ultimately limited by the quantity of game, or other natural products which the territory afforded.†

* See page 201, note.

† Designating the original population by p, the proportion of the population fed by agriculture by $\frac{a}{a+b}$, and the population as increased by the introduction of agriculture by P, we will have $P=P\left(\frac{a}{a+b}\right)+p=p\left(\frac{a+b}{b}\right)$. If, in that equation, we make $b=1$, we will have $P=p(a+1)$; and making a successively equal to 1, 2, 3, 4, 5, 6, 7, we will have, $\frac{a}{a+b}=\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7}, \frac{7}{8}$;

A tract of country containing ten thousand square miles of fertile land, may afford food sufficient for the subsistence of one million of souls. In a state of nature, and without the aid of cultivation, it may not afford annually more game and other natural products than are necessary for the food of ten thousand souls. Supposing agriculture to be introduced amongst that tribe of ten thousand souls, living in what is called the hunter state, and the agricultural labor to be exclusively performed by women; if they should raise a supply of food equal to one-half of the subsistence of the whole population, this could never increase beyond twenty thousand, or twice the number which could be supported by the natural products alone. For, if the number had for a time amounted to twenty-two thousand, since the agricultural labor of the women could only feed eleven thousand, or one half of the whole, and admitting that the natural products still supported ten thousand, one thousand must have been left without food, and the population soon be reduced again to twenty thousand. In the same manner, if the women raised a supply equal to two-thirds or to three-fourths of the annual subsistence of the whole population, this could not have been more than trebled or quadrupled. It is therefore a demonstrated fact, that it is only when agriculture affords an annual supply of food at least sufficient for affording means of subsistence to the whole population, that this may increase indefinitely till the greatest possible quantity of food which agriculture can produce within the limits of the territory, has been attained. The inhabitants of Mexico, Yucatan, and Central America were in that progressive state. They derived their subsistence almost exclu-

$a+1=2, 3, 4, 5, 6, 7, 8$; and $P=p(a+1)$, successively equal to $2p$, $3p$, $4p$, $5p$, $6p$, $7p$, $8p$; that is to say, that if agriculture feeds $\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$, &c., of the whole population, the original population can only be doubled, trebled, quadrupled, &c., by that partial agriculture.

sively from agricultural labor; and in several places a dense population was found concentrated within the limits of a comparatively small district of country. We are then led to inquire how agriculture was introduced into America, and whether it was imported, or of domestic origin?

We have here two leading facts, one positively ascertained, and the other generally admitted by those who have inquired into the subject, the importance of which has not, as it seems to me, been adverted to.

The first is, that all those nutritious plants cultivated in the other hemisphere, and which are usually designated by the name of Cereales (millet, rice, wheat, rye, barley, oats), were entirely unknown to the Americans. An exception is stated by Abbé I. Igns. Molina, who mentions a tradition, that some grain similar to rye was cultivated by the inhabitants of Chili, prior to the arrival of the Spaniards. He never could obtain a specimen of it; and, if a fact, which is extremely improbable, it would be an anomaly belonging to Chili alone, and to no other part of America, and in noways affecting the general fact.

The second is, that maize, which was the great and almost sole foundation of American agriculture, is exclusively of American origin, and was not known in the other hemisphere, till after the discovery of America, at the end of the fifteenth century.

If these two facts be admitted, it necessarily follows; that the introduction of agriculture—that first, difficult and indispensably necessary preliminary step before any advance whatever can be made towards civilization—originated in America itself; that it was not imported from abroad; and that it was the result of the natural progress from barbarism to a more refined social state by the race of red men, insulated, left to themselves, and without any aid or communication from any foreign country. It is therefore highly important, for a correct view of the history of man, that the pre-

sumed fact of maize being exclusively an American plant, should be thoroughly investigated. I cannot procure here such works as might throw light on the subject. I find only in Kempfer's Japan, that the principal plants which contribute most to the sustenance of life, are by the Japanese comprehended under the name of *Gokokf*, that is, the five fruits of the fields; and that these consist of rice, barley, wheat, and two species of beans. The author also states that some other plants are also comprehended under the same name; and amongst these he enumerates *Awa*, Indian corn (Panicum Indicum, Tabern.), and none that seems to be intended for maize; but whether or not, it seems certain that it was not a plant originally cultivated in Japan, and that, if now cultivated there, it was imported at a comparatively recent date.

Baron Alexander de Humboldt considers as indubitable that maize is exclusively a plant of American origin; and Parmentier asserts, that he had demonstrated it in a memoir to the Academy of Bordeaux, which I have not seen. The fact seems to be fully established, so far as relates to Europe and western Asia; and it appears incredible that a grain so eminently useful should not have been imported at an early date into these countries, if it had been cultivated in any part of eastern Asia. Even the eggs of silkworms were brought from China to Constantinople during the reign of Justinian.

It must also be observed that the species of beans, called Frijoles by the Spaniards, which to this day continues to be a principal article of food amongst the Indians of Mexico and Central America, is indigenous of America; and that they, as well as some species of *Cucurbita* unknown in the other continent, were cultivated, not only there, but also by the Peruvians, and by the Indians of the United States.

Whether imported, or of domestic origin, there can be no doubt that agriculture was in America first known, in certain countries situated between the Tropics; whence it spread in

different directions. It has already been shown that the pertinacious indolence of the Indians of North America prevented the increase of population, and the consequent progressive improvements, which would have taken place, had they been willing to work. The same observation applies to several Indian tribes of South America.

The question naturally arises, how it happened that the Mexicans, the Peruvians, and some other nations should have been induced to change those indolent habits, and to conquer that utter aversion for steady and continuous labor, which they had originally in common with the other American Indians. The fact is certain, though we may not be able to account for it.

Judging from what we know with certainty respecting our own Indians, from the accounts given of the similar habits of some tribes in the northeastern parts of Asia, and from the fact that in the most ancient annals or notices of almost every nation, slavery, or degraded casts, are found to be engrafted in the social state, I am inclined to believe that nothing short of compulsion could have changed the habits of any savage nation in the hunter state. Had the Iroquois, at the time of their ascendency, instead of exterminating the neighboring nations, reduced them to a state of slavery, or at least preserved and educated the children for that purpose, an inferior laboring cast would have been created. Something analogous took place amongst the Cherokees, whose great progress in agriculture was undoubtedly promoted by the labor of the negro slaves captured in their wars against the whites. It seems probable that slavery was originally the result of conquest, and that it had a powerful agency in converting savage into agricultural nations. Inequality of conditions was the necessary consequence. Another element gradually became perhaps the most important feature of the social state. Religious feeling is inherent to man; wizards have their influence even amongst savages, and, in that feeling ambitious men found the most efficacious means of governing mankind. It is

certain that, at the time of the Spanish conquest, whether under the Mexican or the Peruvian regimen, the mass of the people was governed and oppressed by a military and religious despotism. After the conversion of a savage into an agricultural people, the transition from entire individual independence to such despotism may be a short process: the advances in the arts and in the acquirement of any species of knowledge, are gradual and slow, often checked by the civil and religious institutions which were first adopted.

If this view of the subject is correct, if conquest and compulsion are probably necessary, in order to convert a savage into a civilized nation, the supposition, that this should have been effected by foreign emigrants is almost impossible. These comparatively recent migrations, whether accidental or designed, whether from Europe or Asia, could consist only of a few individuals at a time. Conquest and compulsion were out of question: and, although we have instances of the success of priests, even of a false religion, in spreading their religious dogmas in foreign countries, they are unable by those means alone to effect a revolution in the social state. The Northmen who did certainly discover America proper, and kept probably an intercourse, during two or three centuries, with its inhabitants, have left no trace of their existence amongst the Indians. We know how ineffectual, after a constant intercourse of two hundred years, had been our efforts to change the habits of the tribes within the limits of the United States. There is no apparent cause why emigrants from Asia should have been more successful in Mexico or Peru. On the other hand, if a domestic origin is admitted, it is quite natural that agriculture should have had its birth, in the most genial climate, and in the native country of the maize.

Whatever may have been the origin of agriculture in America, it undoubtedly began between the Tropics: and its extension either north or south of these limits, or in South

America east of the Andes, does not appear to have produced any sensible advance towards civilization, nor indeed any but a limited increase of population. There are, however, some exceptions to that general position. The most remarkable is that of the Araucanians of Chili, who were a truly agricultural and therefore populous nation. But whatever may have been the origin of their agriculture, the conquering and conquered tribes appear to have been assimilated and equally laborious. It is certain that their government, though partly aristocratical, was republican, that the priestly power was circumscribed, and that the mass of the nation was free. They had no large cities, they erected no splendid edifices, they had made but little progress in arts not absolutely necessary.* But, of all the American tribes which, having emerged from the savage state, had become agricultural nations in the proper sense of the word, the Araucanians are the only people, who to this day have maintained their independence against the Spaniards. The apparently more powerful and civilized empires of Peru and Mexico were each subdued, in two or three years, by a handful of adventurers. As to savage nations, they may be exterminated, or driven away; but they are almost indomitable.

The agriculture of the West India Islands emanated probably from Mexico. It seems also probable that it was through the Islands, that it was introduced amongst our Indians, and that the few tribes west of the Mississippi where it had penetrated† received it from the Indians east of that river. The

* They appear to have borrowed their calendar from the Peruvians, who had in vain attempted to subjugate them. Amongst the few affinities between their languages, the names given to the sun and to the numeral 1000 are similar: Peru, inti, sun; huaranca, 1000; Chili, antu, huaranca.

† All the Indians, from the Gulf of Mexico to the great lakes, and between the ocean and the Mississippi, cultivated the maize. On the west side of that river cultivation was confined to the three sedentary villages of the Ricaras, Mandanes, and Minetares, to the Osages and other southern Sioux, to the Panis, and to the Caddos and some other tribes on the Red River.

cultivation of the soil appears also to have extended a considerable distance due north from Mexico. With those exceptions, there was no agriculture amongst any of the Indian tribes north of the Tropics, between the Mississippi and the Pacific Ocean. The profitable cultivation of maize does not extend much farther north than the forty-fifth degree of north latitude. The region south of that limit, in which there was no agriculture, embraced two distinct tracts of country; all that lay west of the Rocky Mountains; and, east of these, all those immense prairies, destitute of timber, which are and appear to have ever been the country of the bisons, or as we call it, the buffalo range. A tract of this character separated the agricultural tribes of the Mississippi, from those which, without being civilized, cultivated the soil in a direction north and northwest from Mexico. The entire continuity of agriculture from the kingdom of Michoacan to Culiacan, and thence to the Desert of Sonora, cannot be demonstrated. But it appears certain, from the relations of the expeditions of Francisco Vasquez de Coronadò, in the years 1540 to 1543, that maize was raised in abundance at Culiacan and in some other places.*

After having crossed the mountainous country between Culiacan and the Desert of Sonora and the Desert itself, Vasquez arrived at Cibola, a narrow valley between high mountains, said to be three hundred leagues from Culiacan.

* Besides a short relation by Vasquez Coronado himself, and another by Captain Juan Jaramillo, we are indebted to M. Ternaux-Compans for the publication of a much more detailed account by Pedro de Castaneda de Nagera, also one of the expedition. Consult also, for the breadth of the buffalo range, and for the place west of the Rio Norte, where the cultivation of maize commenced, the relation of D'Alvar Nunez Cabeca de Vaca. The distances, courses, and topography are vague and obscure; but an important fact stated by Jaramillo is, that all the rivers and rivulets till the Spaniards arrived at Cibola fell into the Pacific Ocean, and all those beyond one day's march the other side of Cibola fell into the Atlantic. This proves that Cibola was situated on the sources of a tributary of the Colorado of California, and Tiguex on the Rio Norte.

This province and the adjacent district of Tucayan contained fifteen villages, and were situated on the sources of a tributary of the Colorado, probably the Rio Gila. Thence, crossing a high range of mountains, he reached the province of Tiguex, situated in a long and narrow valley, through which runs a considerable river which empties into the Gulf of Mexico. That valley is stated, as being one hundred and thirty leagues in length, and contained fifty-six villages, including some in the mountains. Cicuye, one of the northern villages, is said to have been seventy leagues from Cibola. Vasquez wintered there; and in the spring, travelling northeastwardly and crossing another range of mountains, he arrived in ten days in the buffalo country. There the Indians did not cultivate the soil; and the description of their habits and pursuits, as well as that of the country and of the bisons, is precisely the same as that which might now be given.* It appears certain that the long valley of Tiguex is the same, which is now called New Mexico. The names indeed do not generally correspond. Yet in Chia, Gemez and Taos, we may recognize Cia, the Hemes and the Teyas. The name of Tiguex is preserved in Bellin's map of 1744, annexed to Charlevoix's New France.

This oasis deserves notice, because the population, which was more dense than usual, appears to have been eminently agricultural, living in houses several stories high, partly of wood, principally of a mixture of earth and some kind of mortar. They had no human sacrifices; and, though not farther advanced in arts, were as brave, but more humane and civilized than the wild tribes between Michoacan and the Desert

* Gomara, quoted by Mr. Prescott, was certainly misinformed when he stated that the buffaloes had at that time been tamed and domesticated by the Indians. He may have been deceived by loose reports, and such tales as had been circulated by the monk Marcos de Niça: but the only expeditions in that region, at the time when Gomara wrote, were those of Vasquez and De Soto, and De Vaca's Travels; all which positively contradict the assertion.

of Sonora. That they derived that civilization, or at least their agriculture, from the Mexicans, is proved by the important fact, that they cultivated precisely the same plants, maize, beans and pumpkins (maïs, haricots et courges); and it must be recollected, that this observation applies to the Indians of the United States and even to the Peruvians.

The uniform tradition of the Mexicans was that they, their kindred tribes, and, several hundred years before, the Toltecs, who spoke the same language with themselves, had come into the country of Anahuac from a more northern country. They called this, old Tllapan, and Aztlan, and, without assigning any precise locality, speak of it and of that of the Chichimecs, as being adjacent to the kingdom of Michoacan. The hypothesis which places Aztlan in a remote country, in Asia, or even on the banks of Rio Gila, are modern suggestions. There is not the slightest foundation for the first supposition, which was adopted by Boturini. Clavigero, who makes the Atzecs to come from the Rio Gila, appears to have embraced that opinion principally on account of the ruins of buildings, on the banks of that river and of others farther south, generally called "casa grandé," and which are supposed to have been built by the Atzecs. These edifices are of the same character and made of the same materials, earth, mud, mortar, intermixed with wood and perhaps some stones,* as those de-

* Jaramillo says that the walls of the houses in Cibola are made of stone and earth; and that at Tihuex they are not of stone, but of earth, and similar to mud walls (*murs de torchis*). Castenada says that they do not use lime, but a mixture of ashes, earth, and coal, which supplies it. He adds that they mix the ashes of reeds and other plants with earth and water, and that they divide the mixture into balls, which they dry, and use them in lieu of stones, plastering the whole with the same mixture, and giving it the appearance of mason's work. He mentions a village surrounded by a low stone wall. He estimates the population of the villages as varying from two hundred to one thousand souls, and the population of the whole country about twenty thousand men. Father Font, in his more recent description of the ruins on the Rio Gila, says that the exterior walls are six feet thick, that the whole edifice is of earth, that it had three stories, and that there were blocks of *murs de torchis* of several sizes, showing that there had been a canal bringing water from the river.

scribed three hundred years ago by the first invaders of Cibola and New Mexico. No trace of the Mexican language has been discovered in any part of that region. Castenada mentions three languages in the vicinity of Culiacan, the Tahu, the Pacasa and the Acaxa; and we have a grammar of the Tarahumar, spoken in the same region. This has not in its words any affinity with the Mexican; and the people who speak it have a decimal arithmetic. It seems probable that the Indians of New Mexico and of the country south of it, as far at least as Culiacan, were not of the same stock or family as the Mexicans or Toltecs, though they must have received their agriculture from these nations.

The tradition respecting the Toltecs ascends to so remote a date, and is so obscure and intermixed with mythological fables, that it is impossible to designate, either the locality of their primitive abodes, the time when they first appeared in the vicinity of the valley of Mexico, or whether they were preceded by nations speaking the same or different languages. It is asserted that they came from the north, a vague expression, and which may have been equally applied by the Mexicans, to a country immediately adjacent to the northern boundary limits of their empire, or to a more remote region.

The Atzecs, Acolhuas and other kindred tribes which, after the overthrow or dismemberment of the Toltec monarchy, occupied the valley of Mexico and its vicinity, were of the same language, family, and stock as the Toltecs. They must have been colonies from that nation, or a portion of it left behind, when the great body first migrated into the country of Anahuac. The first supposition appears to me the most probable, if reliance can be placed in what is asserted, respecting their agriculture, and the astronomical knowledge, which enabled them to reform their calendar a century before their arrival in the valley of Mexico. But whether a colony, or the residue of the ancient Toltecs, the hypothesis which

places the country named Aztlan whence they came, in Asia or in some remote northern place of America, is an imaginative and very improbable conjecture of Boturini and other modern writers. The more ancient traditions either assign no locality, or, as Fernando D'Alva, place the country whence the Atzecs came, on the limits of the province of Xalisco. And it must be recollected, that this last writer asserts that they were the descendants of fugitive Toltecs led by one Huetzin, who had fled there at the time of the dissolution of the Toltec empire.

The Colhuans are not mentioned as one of the seven kindred tribes, speaking the same language, which occupied the country previously possessed by the Toltecs: and Clavigero supposes that they had been confounded with the Acolhuas. Their traditional history is obscure; but they were clearly distinguished from the Acolhuas. Fernando D'Alva asserts positively, that they were a residue of the Toltecs, who had remained on the banks of the Lake of Mexico; that they were subdued by the Chichimecs, (afterwards intermixed with and known by the name of Acolhuas,) but, though paying tribute, remained a distinct kingdom; and subsequently, that the Atzecs, shortly after their settlement at Mexico, plundered the city of the Culhuas, who had been much opposed to them, though of the same nation. The correctness of the information transmitted by that author may well be doubted; but, in this case, it is corroborated by some collateral circumstances.

Tapia Zenteno, in his Mexican Grammar (page 14) says, that *Colli* means grandfather, and that its plural is *Colhuan; Nocolhuan*, my grandfathers. And Paredes (page 22) gives the following illustration; *incal in nocolhuan*, the house of my grandfathers (la casa de mis abuelos). This expression is, at least in the Spanish (mis abuelos), equivalent to my ancestors. The hieroglyphic of the city of Mexico is a Nopal growing out of a rock, and applies properly to a locality. But before that time, the Mexicans had the same hieroglyphic, or

if the expression may be used, the same arms as the Colhuas. The hieroglyphic of the king of the Colhuas is found in Gemelli's Travels of the Atzecs, (Humboldt's Monuments, plate 32, No. 30,) and also in the painting from Boturini's collection, where he receives Prince *Huitcilihuitl.* In both plates, the Colhuan king has above him a hawk's head, and behind him the representation of the remarkable horned mountain, which is always interpreted Culiacan or Colhuacan. In the same painting of Boturini, the representation of the same mountain is annexed to their landing, as the common hieroglyphic of the eight* tribes, each of which has besides its specific hieroglyphic. It seems, therefore, probable that the name of Culhuas was given by the Mexicans to a residue of the Toltecs who had remained near the banks of the Lake of Mexico, because they considered the Toltecs as their ancestors; and that the word Colhuacan, or Culiacan means, "the land of our ancestors."

The Aztecs, Acolhuas, and other kindred tribes would then appear to have been a colony or extension of the Toltecs, perhaps the most northerly portion of that monarchy, who, either having taken a share in its dismemberment, or taking advantage of that catastrophe, took possession of Anahuac. This is much more natural than the supposition which places their abodes at a considerable distance towards the north. There is, under any supposition, much obscurity and uncertainty respecting the Chichimecs. They seem to have spoken the same language as the Toltecs, and to have originally belonged to the same family, but to have remained or fallen into the savage state. According to the universal tradition, a portion of them was the first tribe which entered into the valley of Mexico after the overthrow of the Toltec monarchy; but from their inferiority, either in number or in civilization, they soon became incorporated with the Acolhuas, and the latter name ultimately prevailed. Subsequent to the

* According to that painting, there were eight instead of seven tribes.

Spanish conquest the name of Chichimecs was vaguely given, not only to the portion of that nation which had remained in the hunter state, but to all the savage tribes northwest of Mexico as far as Culiacan. This presumed history of the Aztecs and other tribes speaking the same language is only a conjecture, rendered probable by the fact, that no trace has been discovered of the Mexican language in countries lying farther north. But it seems to me, that any hypothesis which would place their abodes farther off than the valley of New Mexico, is altogether inadmissible.

It is much more difficult to form any rational conjecture respecting that extinct race, which has left conspicuous proofs of its existence in the valley of the Mississippi, and concerning which the Indians who occupied that country in the sixteenth century had preserved no tradition.

The monuments left by that race are principally numerous earthen tumuli or graves, and extensive earthen works apparently intended for defence. To these must be added some remarkable works which could not have been intended for that purpose alone. Such are those at Circleville and its vicinity, and the quadrilateral mound near the Mississippi, as described by Mr. Brackenridge, on which the monks of La Trappe had once fixed their residence, and which has some resemblance to the pyramid of Cholulla. The love of the marvellous has occasionally given rise to some exaggerations. But, if the objects found in the mounds do not afford evidences of a much greater progress in the arts than the Indians of the United States had attained when first visited by the Europeans, we find in the monuments themselves proofs, not only of a more dense and therefore agricultural population, but also of a different social state.

All the modern Indian forts from Florida to Canada, as described by the writers of Soto's expedition, Champlain, and subsequent writers, were wooden structures defended by pali-

sades, and of a moderate extent, proportionate to the population of the Indian tribes who erected them. The ancient fortifications, surrounded by earthen ramparts, include occasionally a far greater space than would be necessary to contain, or could be defended by, any modern Indian tribe. We have an authentic and detailed description, by Lewis and Clark, of one of these works on the banks of the Missouri. The ramparts or earthen walls which surround it are more than three thousand five hundred yards in length, in their present state, from six to twelve feet high, and in places seventy-five feet broad at the base: the ground enclosed was estimated by those gentlemen to exceed five hundred acres. It appears impossible that the population, for whose habitations such extent was necessary, and which was able to defend the work, should not have been eminently agricultural; and the density of the population is also proved by the great number of not only tumuli, but of other receptacles for the dead, found in the tract of land called the American bottom, on the eastern side of the Mississippi, nearly opposite to St. Louis. The quadrilateral pyramid in the same quarter, the circle connected with a parallelogram at Circleville, and some other works, situated on the top of hills destitute of water, could not have been erected solely for purposes of defence; and the most probable conjecture is, that they were connected with some regular form of worship.

The highest, perhaps, of the tumuli is that on the southern bank of the Ohio, at the mouth of Grave Creek, about one hundred miles below Pittsburgh. I dare not draw any inference from the small engraved stone said to have been found in it; but the mound itself is an irrecusable witness. It is an irregular truncated cone, about seventy feet high: its circumference is about three hundred yards at the base, and about one hundred and sixty feet at the top. Its contents may be estimated at about two hundred thousand cubic yards of earth. It has been perforated horizontally near its base and vertically

from top to bottom, and was found to have contained only two small rooms, one above the other, at the distance of seventeen feet. These, which had caved in, were roughly constructed with upright logs of wood, covered with flat stones lapping one on the other. The lower room contained the skeletons of two bodies, one of which is presumed to have been that of a female: in the upper room there was but one skeleton. This work was therefore constructed for the sole purpose of burying successively two chiefs, and probably their wives. There is not, and there was not in the sixteenth century, a single tribe of Indians (north of the semi-civilized nations) between the Atlantic and the Pacific, which had means of subsistence sufficient to enable them to apply for such purposes the unproductive labor necessary for the erection of the work; nor was there any in such social state as would enable a chief to compel the labor of the nation to be thus applied.* It is only under a despotic form of government, that pyramids will be erected in honor of the prince. The mound of Grave Creek indicates not only a dense agricultural population, but also a state of society essentially different from that of the modern race of Indians north of the Tropic.

As now informed, there is but one leading fact which may aid us in forming any conjecture respecting that extinct race. Their monuments are found exclusively in the valley of the Mississippi, and they are not even seen on the upper or northwestern branches of the Missouri. Not a single one has ever been found either east of the Alleghany or west of the Rocky Mountains. It seems impossible that, if coming immediately either from Europe or from Asia, they should have left no traces whatever of their existence in the regions where they must have landed. There seem to be but two alternatives.

* The Natchez, where the caste of the Suns had acquired a religious ascendency, might perhaps be an exception. Amongst the Caddos, the tumuli are called the mounds of the women: they think it impossible that men could ever have bestowed their labor on such works.

Either they were a colony from Mexico; or some of the savage tribes must, by conquest and a process similar to that already alluded to, or by some other means unknown to us, have converted themselves into an agricultural nation. The first supposition seems to me the most probable; and, at all events, their agriculture must have been derived from Mexico. In either case, and whatever opinion may be entertained respecting their origin, or of their apparent progress in agriculture, it appears that they were not numerous or strong enough to maintain their position; and they must have been ultimately either exterminated or driven away by the savage tribes which surrounded them.

Although the custom of erecting durable mounds of earth over the graves of the chiefs of a nation may not have prevailed universally in Mexico, yet such tumuli are found in some places, and more particularly in the vicinity of Teotihucan, six leagues north of Mexico.*

Much remains to be done, in order to form a correct opinion of the development of the moral and intellectual faculties of the natives of Mexico and Central America prior to the Spanish conquest, as exhibited in their civil, political, and religious institutions. The narratives of the first conquerors. Cortez and Bernal Diaz, are highly interesting and replete with information; they paint in vivid colors the impression made upon them by outward, visible, and material objects; but works which have been but lately published, those of Sahagun and of Zurate, and several less elaborate notices in M. Ternaux-Compan's collection, have thrown much additional light

* Sahagun, when describing the two artificial mounts erected there in honor of the Sun and of the Moon, also says: "Allí tambien se enterraban los principales y señores, sobre cuyas sepulturas se mandaban hacer tumulos de tierra, que hoy se ven todavia, y parecen como montecillos hechos a mano, y aun se notan todavia los hoyos donde sacaron las dichas piedras ó peñas de que se hicieron los tumulos." (Book X. Chap. 29. Vol. III. p. 141.)

on the true social state, institutions, and civilization of the Indians. In order to draw correct inferences, it will be necessary to attend particularly, both to the prejudices of the authors, and to the effect produced on the Indians by their intercourse with the Europeans.

The pertinacity with which our own Indians adhere to their mode of life, and their almost unconquerable aversion to daily manual labor, may have induced the belief, that the tribes which continued independent and in the hunter state are, in every respect, the same as they were two hundred years ago. That opinion is entirely erroneous. The intercourse with the whites has enlarged the sphere of their ideas, and produced a far greater effect on their intellect, opinions, and belief, than on their actions. There is no subject to which this observation applies more forcibly than to religious belief. It often happens, in the lapse of time, that the Indians ascribe to their remote ancestors notions, which their fathers had received from the Christians with whom they were in contact. Thus the Pagan Delawares, as we are informed by Heckelverder, did in his time believe in the unity of a Supreme Intelligence which governed the world; a belief which they had most probably adopted in the friendly intercourse of two generations with the Quakers.

This observation has been suggested by Sahagun's sixth book, which treats of the philosophy, morals, and religious belief of the Mexicans. The substance may be true; but several of the orations convey elevated and correct notions of a Supreme Being, which appear to me altogether inconsistent with that which we know to have been their practical religion and worship. The exhortation of a mother to her daughter has the appearance of a corrected edition. It is such as might have been taught fifty years after the conquest* to an

* Sahagun mentions the year 1571 as that in which he was writing his work; he died in 1590.

educated Christian Indian lady, an imitation of the original form, with such corrections as the conversion from idolatry to Christianity rendered necessary. The addresses to the gods and various other portions are apparently of the same character.

The Spanish conquerors were forcibly struck with the discovery of a powerful empire, of populous cities and of an apparent civilization, which they had not expected to find in America. This, combined with the spirit of the age, and the romantic enthusiasm which at that time characterized the Spanish nation, produced that tendency to exaggerate, which is visible in the writings of all the contemporaneous authors. Some sober-minded and cautious historians, such as Dr. Robertson, may have run into the other extreme, and denied to the Mexicans the degree of knowledge and civilization which they had actually attained. Clavigero's history was written principally for the purpose of vindicating the Mexicans; and it is to be regretted that it should be rather the work of an advocate than of an impartial judge. In trying to form a correct estimate, an allowance or deduction must always be made, on account of the exaggerated representations of the original writers. Their statements of numbers cannot be relied on. Even the virtuous and devoted Las Casas, in his abhorrence of the Spanish cruelties, has magnified the number of the victims, and given exaggerated notions of the original Indian population. What this actually was it may be impossible to ascertain; but it appears to me that, in Mexico and Central America, it must necessarily have been much less than the aggregate amount, at this time, of the pure Indians and mixed races.

At the time of the Spanish conquest and as far back as their traditions ascended, the Indians were and had been in a perpetual state of warfare, and theirs were wars of extermination. This, after the short, reckless, and cruel war of the conquest, has been followed by a period of near three hundred

years of internal peace. And, upon the whole, the great mass of the nation appears to have enjoyed more security and to have been less oppressed than under the despotic sway of the ancient nobles and priests. There is a still more important consideration. Not only has a new field been opened for an increased population, by the colonization of some of the richest provinces north of Mexico and by the working of mines; but the pure agricultural labor has necessarily become far more productive than prior to the arrival of the Europeans. The introduction of iron and of more effective tools, of various mechanical arts, of all the European cereales, and, above all, of domestic animals and of the substitution of animal for manual labor, must have doubled or trebled the quantity of agricultural products produced by the same number of men. Population naturally increased with the means of subsistence. This progressive process of improvement and increasing population commenced near three hundred years ago, and has continued ever since. Some of its results are seen in the accumulation of capital and in the large amount of the exports. The internal commerce has been prodigiously increased since the conquest, and prior to it there was no external commerce whatever.

The conquest of Mexico is an important event in the history of man. He who achieved it, to indomitable energy, united talents of the first order; and the history abounds with thrilling and dramatic incidents. Mr. Prescott has exhausted the subject, and erected a permanent monument, equally honorable to himself and to the country. Yet it is a sorrowful tale, in which we can feel no sympathy for the reckless and cruel Spaniards, hardly any for the ferocious Mexican. In the sequel, and whilst the conquerors were dividing the spoils and distributing the enslaved Indians amongst themselves, we meet with but one refreshing circumstance. Mr. Prescott has done justice to the Dominican monks, who, inquisitors and relentless persecutors in Spain, became in America the pro-

tectors of the Indians. There, a continual war of eight hundred years against the infidels had generated the most deadly hatred towards Musselmen, Jews, and apostates. Here, where the ignorant Pagans had been the harmless victims of priests, or, as it was thought, of demons, the better feelings of human nature and the spirit of Christianity prevailed. The praise must be extended to all the Catholic priests, whether Franciscans or Jesuits, monks or curates. All, from the beginning, were, have ever been, and continue to be, the protectors and the friends of the Indian race. Proofs of their zeal and of their constant endeavors to ameliorate the fate of that people are found, not only in the well-known life of Las Casas, but in their letters and constant applications to the King and other superior authorities. They may, in some instances, have displayed more zeal than knowledge, and they sometimes applied for laws that were impracticable; but their efforts were not unavailing. It is due to the Spanish government at home, and even to Philip the Second, to acknowledge that the gross acts of injustice, which had been committed in the years immediately following the conquest, were in many instances repaired as far as was practicable; that freedom was restored to the Indians; and that, though still an inferior class, their situation was greatly ameliorated, and far preferable, during the two last centuries of the Spanish dominion, to that in which they were found by the Europeans.

In no respect whatever was the change greater and more beneficial than in the overthrow of their idolatrous and detestable religious worship. Their conversion to Christianity may at first have been but nominal. But, as was justly observed by one of the first missionaries, the Indians did not love their former gods; they were afraid of them. It was, at all events, an inappreciable blessing to be relieved from that yoke of blood which made them sacrifice their own children in order to appease their false-gods, and to have for priests humane and kind men, instead of tyrants and butchers.

The Catholic missionaries may have made a distinction between adoration and veneration. But, after having read the catechisms and other religious instructions prepared for the Indians, it appears evident that they hardly emerged from Paganism, must necessarily have assimilated the saints to their inferior deities, and considered the Virgin Mary as a goddess of superior order, to whom principally their prayers should be addressed. Still it was a blessing to exchange the murderous Goddess of Death and War for Mary; that model of purity, the mother in the flesh of Christ, with no other attribute than that of pity and love for mankind, and incessantly occupied in no other work than that of imploring the mercy of God for fallen sinners.

Protestants lament that purer views of Christianity should not prevail in those regions; and the intelligent Catholic may regret that exploded superstitions should continue to impede the progress of knowledge and of true civilization. The curates may not be every where, and in every respect, patterns of morality: the law of nature has proved stronger than the arbitrary decree which enjoins celibacy. But they still exercise a most beneficial influence over the Indians; they continue to be their friends and protectors;* and they are imbued with the true spirit of Christian charity towards all men. We may see in the graphic descriptions of Mr. Stephens, that the foreign heretics found a home in every curate's house, were always hospitably received, and in every respect treated as brethren.

* Besides officiating in all the services of the church, visiting the sick, and burying the dead, my worthy host was looked up to by every Indian in the village as a counsellor, friend, and father. The door of the convent was always open, and the Indians were constantly resorting to him: a man who had quarrelled with his neighbor; a wife who had been badly treated by her husband; a father whose son had been carried off as a soldier; a young girl deserted by her lover; all who were in trouble or affliction, came to him for advice and consolation, and none went away without it. And, besides this, he was principal director of all the public business of the town; the right hand of the alcalde; and had been consulted whether or not I ought to be considered a dangerous person. (*Stephens's Travels in Central America*, Vol. I. p. 171.)

APPENDIX NO. I.

GRAMMATICAL NOTICES, ETC.

(1.) MEXICAN LANGUAGE.

Extracted chiefly from the Abridgment of Father Horatio Carochi's Grammar, by Father Ignatio de Paredes, Mexico, 1759; partly from the Curate Carlos de Tapia Zenteno's Grammar, Mexico, 1753.

THE sounds expressed by the letters *b*, *d*, *f*, *r*, and the Spanish *j*, do not occur in this language; the *u* is sounded as the English *oo*; and a sound analogous to the English *w* is expressed generally by the letter *u* and sometimes by *v*. The letter *g*, if it ever occurs, is sounded like *h*; the sound *s* is generally expressed by the *c* with a cedilla; the *x* expresses a sound different from the Spanish, but which is not defined with precision. The accent called "saltillo" may be supplied by the *h*; but unless attention be paid both to this and the other accents, errors in etymology will be unavoidable. In other respects the spelling is in conformity with the Spanish pronunciation; with respect to which, it must be recollected that the *qu* is sounded like *k*, *z* like the English *th* in the word *thin*, and the *ch* as in English.

Nouns.

Nouns are not distinguished in reference to the masculine and feminine genders. The distinction is that of either animated beings and inanimate things, or of rational beings contrasted with both irrational animals and inanimate things.

In speaking of man, the sexes are distinguished by different names: father and mother, son and daughter, brother and sister, &c. But in speaking of animals, the sex is not otherwise distinguished than by prefixing to the name of the animal the words *okich* and *cihua*, which mean respectively, male and female.

The inflections of nouns expressive of cases occur only in the vocative. If you call a man named Pedro, the men will add *é*, *Pedroé;* but the women will only put an emphatic accent on the last vowel of *Pedró.*

In the nouns of inanimate things, the plural is the same as the singular; such excepted as are personified and considered as animate, "stars," "sky," &c. It appears, however, that this defect may be supplied by prefixing the word *miec*, which means *much, many*, and may be used both for animated beings and inanimate things. Father Paredes does not, however, allude to this mode of expressing the plural.

The plural of animated beings is formed in different ways.

Nouns ending in *tl, tli, li, in*, always lose this final syllable, either in their plural, or whenever they are compounded with other nouns, with verbs, or with particles; for which reason these syllables are called *amissible.*

In forming the plural, nouns ending in *tl* change it into *mé: ichcatl*, a sheep; plural, *ichcamé.* Nouns of nations, of persons and offices, and a few others, must be excepted, which simply lose the last syllable *tl; Mexicatl*, a Mexican, plur. *Mexica; cihuatl*, a woman, plur. *cihua.* Except also some nouns of animals, which in the plural double their first syllable, and omit the final *mé: coatl*, a snake, plur. *cocoa.*

Nouns ending in *li, tli, in*, substitute in the plural *mé* or *tin* for the last syllable: *tatli*, father, plur. *tatin;* and some of these also double their first syllable: *tochtli*, a rabbit, plur. *totochtin.*

Nouns ending in *ki* or *k*, which are derived from the preterite of verbs, change in the plural that final into *ké;* and

nouns ending in *hua*, *e*, *o*, add in the plural the same termination *ke*. This last class consists generally of derivative nouns. Thus, from *ixtli*, face, is derived *ixe*, he who sees, a wise man; and from *nacaztli*, the ear, is derived *nacace*, he who hears, a prudent man; plur. *ixeke*, *nacaceke*, wise men, prudent men. Some of the nouns ending in *ki* also double their first syllable: *micki*, dead, plur. *mimicke*. But in some cases that duplication indicates a variety of parts or things: *tlatoc*, a lord, *tlatoke*, lords; but *tlatlatoke* means, lords of various districts.

Besides these several modes of forming the plural, all the nouns, when connected with the possessive pronouns, may have their plural end in *huan*, sometimes by adding that syllable, sometimes by substituting it for the last syllable of their ordinary plural.

All nouns may unite with four particles, always placed after the noun, which alter or modify their meaning. These four particles are *tzin* or *tzintli*, which means reverence, respect; *ton* or *tontli*, which means the reverse, underrating, contempt; *pol*, which implies excess, and is generally taken in a bad sense; *tlatlacoani*, a sinner, *tlatlacoanipol*, a great sinner; and *pil*, which implies diminution and affection: *ichcatl*, sheep, *ichcapil*, a lamb.

The manner in which the nouns are thus compounded consists generally in substituting for their final syllable one of the four aforesaid particles, sometimes by adding the particle without losing their final syllable, and sometimes by connecting the said particle with the noun by the conjunctive particle *ca*. And the words thus compounded form their plural in conformity with fixed rules not materially different from those above stated. The most remarkable of these combinations is that which results from the union with the particle *tzin*, *tzintli*, implying respect or reverence, and which is not confined to nouns, but extends to verbs and particles, and pervades the whole language.

The comparative and superlative are not expressed by an

inflexion of the adjective, but by some particles, *ocachi*, *ocye*, *octachcauh*, *ochualca*, which signify, much, more, connected with the verb *tlapanahuia*, to surpass or exceed; and other particles, *inamo*, *inamoyah*, which signify, not thus. In order to say, I am more learned than thou, you may say, *nehuatl* (I) *ocye* (more) *nitlamatini* (I am learned), *inamo* (not thus) *tehuatl* (thou). Or the verb meaning, to exceed, may be used, and the sentence will assume this form: Pedro learned, he surpasses John.

The superlative is expressed by such words as *huel*, *cenca*, much, greatly; or by *acic*, a perfect thing; or by the above-mentioned verb *tlapanahuia*, to exceed.

Article.

The particle *in*, which has several other meanings, is also the equivalent of our article "the": *in teopan*, the church; *in nopillo*, the my nephews. This last example shows that it is used in connection with the possessive pronoun. In the following sentence, *incal in nocolhuan*, the first *in* means "their," and the second means "the;" literally, *in cal in no colhuan*, their house the my ancestors, the house of my ancestors.

Pronouns.

The personal pronouns appear in all the Indian languages to be divided into two classes. The first comprehends all those which may be called absolute, that is to say, which, though they may sometimes be used in connection with verbs, can alone be used by themselves and independent of any connection either with nouns or with verbs. The second class comprehends those which are used in connection with nouns or verbs; and they are generally called by the Spanish grammarians, semi-pronouns. In some languages the possessive

pronouns, or those which are connected with nouns, are the same with those used in conjugating verbs; in the Mexican, they are distinct.

The Mexican absolute pronouns are,

Pers.	*Singular.* 1st.	2d.	3d	*Plural.* 1st.	2d.	3d.
	né	té	ye	tehuan	amehuan	yehuan
	nehua	tehua	yehua	tehuantin	amehuantin	yehuantin
	nehuatl	tehuatl	yehuatl			

The pronouns *né, té, yé,* are never used unless followed by a noun or a verb. If you ask a man, whether he has done a certain act, or who has done it, he may answer by the single pronoun *nehuatl,* which will mean, "I have done it;" and so on for the other persons. But if he uses in his answer the pronoun *né,* he must add to it the verb which expresses the act alluded to, conjugated in the same manner as if he had not used the pronoun *ne,* which of course may be omitted.

The possessive pronouns are,

Persons,	*Singular.* 1st.	2d.	3d.	*Plural.* 1st.	2d.	3d.
	no	mo	i	to	amo	in, im

In the third person plural, *im* is used when the following noun commences with a vowel or with *m,* in all other cases, *in* is used.

The word *calli* means house, and when compounded with the possessive pronoun, it loses its final *li.* Thus connected, is is declined as follows: *Nocal,* my house; *Mocal,* thy house; *Ical,* his house; *Tocal,* our house; *Amocal,* your house; *Incal,* their house.

These pronouns united with *ma* or *matca; noma, moma, ima,* &c., mean, I, in person, of my own accord; thou thyself, he himself, &c. Connected with the particle *sel; nosel, mosel,* plural, *toseltin, amoseltin;* they mean, I alone, thou alone, &c.

The possessive pronouns may be united not only with nouns, but also with various inseparable particles, which have the character of prepositions but are always placed after the pronoun.

In these several combinations, whenever the noun or preposition begins with a vowel, this coalesces with the final vowel of the pronoun, and only one is preserved; at times, that of the pronoun; at other, that of the preposition.

In various instances, the nouns united with the pronouns lose or alter their termination.

Nouns ending in *tli, li, in,* lose that termination; *tilmatli,* a cloak; *notilma,* my cloak. Those ending in *ki,* change it into *kauh;* and those ending in *hua, e, o,* and *k* add *kauh* to their termination; *tliltic,* a negro; *notliltikauh,* my negro.

Nouns ending in *tl* lose that termination, sometimes without substituting any other; *icxitl,* foot; *nocxi,* my foot; but they generally substitute the termination *uh; teotl,* God; *noteouh,* my God; *atl,* water; *nauh,* my water.

Various other mutations of a similar nature are omitted; and there are in every case several exceptions. But the final termination of the nouns, at least of those ending in *tl, tli, li,* and *in* is always lost; and it appears to me that, in etymological researches, they should always be retrenched in order to ascertain the true root of the word. Thus for instance, retrenching the termination *tl* from the word *atl,* there remains for the root, *a* or *auh;* which is also the word for water, in the languages of Yucatan and Guatimala.

The particle *in* is not only the equivalent of our article, "the," but also of the relative pronoun, "who," "he who," "they who." The interrogative pronouns, "who," "which," "what," are, in speaking of persons, *ak, akin;* plural, *akike;* in speaking of things, *tle, tlein.*

Conjugation of Verbs.

The persons are not distinguished by any inflection of the verb itself, but only by the personal pronouns united with it.

The same rule applies to the plural of verbs, which is distinguished from the singular, no otherwise than by the plural termination of the personal pronoun.

The great distinction, in this, as well as in most other American languages, is that of neuter or intransitive, and active or transitive verbs. But, in the Mexican, all the active or transitive verbs, are conjugated as neuter verbs, when the object of the action (el paciente) is not specially expressed. And this comprehends verbs compounded of a verb and a noun, because in this case, the object is already incorporated in the compounded word. Thus, from the noun, *cactli*, a shoe, and the verb *chihua*, to make, is formed the active compounded word, *cakchihua*, to make shoes, which is conjugated like a neuter verb.

In uncompounded active verbs conjugated like neuter, the particles *te*, *tla*, *tetla*, are intercalated between the pronoun and the body of the verb, for the purpose of distinguishing the nature of the object, though this is not specially expressed. The particle *te* shows that the object is a rational person; *tla*, that it is an animal or an inanimate thing; and *tetla* is used in a most indeterminate sense, that is to say, when the action is only indicated in the abstract, and without designating the nature of its object or objects.

The verb *huiteki* means, to whip or to strike. If I mean to say that, I have whipt a person, without specifying whom, the verb will be *tehuiteki*; if a beast or an inanimate thing, the verb will be *tlahuiteki*. The verb *popolhuia* means, to forgive. If I mean to say generally that, I have forgiven, without expressing either what or whom I have forgiven, the verb will be *tetlapopolhuia*. And these are also conjugated like neuter verbs.

The pronouns used in conjugating these verbs are the following:

	Singular.			*Plural.*		
Persons,	1st.	2d.	3d.	1st.	2d.	3d.
	ni	ti		ti	an, am	

The third person singular is not expressed; the only difference between the second person singular and the first person plural consists in a strong accent on the final *i* of the plural. In the imperative and optative, or subjunctive, *xi* is substituted in the plural and singular, for the *ti* and *an*, *am* of the second person. When the verb begins with a vowel these pronouns lose the final *i*, and *am* is used instead of *an* in the second person plural.

Nemi is a neuter verb which means, to live, to be alive, and also, to walk. *Cakchihua*, as already stated, is a compound verb, which means, to make shoes. *Pohua* is the root of an active verb, which means, to count; *tlapohua*, therefore means, to count something, but without specifying what. These three verbs are therefore conjugated in the same manner: and the present of the indicative is as follows:

		Nemi	*Cakchihua*	*Tlapohua*
Sing.	1st pers.	Ninemi	Nicakchihua	Nitlapohua
	2d "	tinemi	ticakchihua	titlapohua
	3d "	nemi	cakchihua	tlapohua
Plur.	1st "	tinemi	ticakchihua	titlapohua
	2d "	annemi	ancakchihua	antlapohua
	3d "	nemi	cakchihua	tlapohua

The indicative mood has besides the present four other tenses, viz.:

The preterite imperfect which is formed by adding *ya* to the present.

The preterite perfect which is formed by prefixing the particle *o* to the pronoun, and generally by omitting the final vowel of the present: but there are several exceptions which will be hereafter adverted to. In the plural, *ke* is added to the singular.

The preterite plusqueperfect which is formed by adding the particle *ca* to the preterite perfect; but *ke* is not added in the plural.

The future which is formed by adding *z* to the present; and in the plural, *ke* is added to the singular.

The imperative substitutes *xi* to the pronouns *ti* and *an* of the second person, and in other respects is like the present of the indicative, prefixing the particle *ma*, which is the characteristic of both this and of the optative mood. The plural adds *can* to the singular.

The present of the optative is the same as the imperative: but, for the particle *ma*, *macuela*, which means, "may it be," is generally substituted; and when conditional, *intla*, which means "if," is prefixed.

The preterite imperfect of the optative is formed by adding *ni* to the present of the same mood; but *can* is not added in the plural.

The future of the optative is formed by adding *kia* to the future of the indicative.

The infinitive is said to be wanted; it is generally supplied by the future of the indicative; on some occasions by the preterite or future of the optative.

Participles are also said to be wanted. Words formed by adding *ni* to the present of the verb: such as *tlasotlani*, and passively *tlasotlaloni*, from the verb *tlasotla*, the root of the verb, to love, are considered as verbal nouns; the first meaning, generally, a lover, and the other, amiable, worthy to be loved, rather than one who is actually loved.

The principal exceptions and varieties occur in the formation of the preterite. The general rule, as already stated, is to retrench the last vowel of the the present tense, and to prefix *o* to the pronoun: *nimachtia*, I teach; *onimachti*, I have taught. But if the letter next preceding the final vowel be *m*, this is converted into *n*; if it be *s*, this becomes *z*; if *u*, *h* must be added; but if it be *hu*, this is converted into *uh*. Thus the preterite of the verb *tlapohua* is in the first person *onitlapouh*.

There is, however, a numerous class of verbs which form their preterite by adding *k* to the present. These are monosyllabic verbs (*kui*, to take; pret. *kuik*), and also those verbs

where in the present tense the final vowel is preceded by *k*, or by two consonants; or where the penultimate vowel is accented, or where the last vowel is *o* (*tzinti*, to begin, pret. *tzintik*; *maka*, to give, pret. *makak*; *chicha*, to spit, pret. *chichak*; *temo*, to descend, pret. *temok*). All the passive verbs ending in *lo* follow the same rule (*pohualo*, to be counted, pret. *pohualok*); and also neuter verbs formed from abstract nouns ending in *otl*. (From *tenyotl*, fame, is formed the verb *tenyoa*, to be famous, pret. *tenyoac*). To that list may be added some particular verbs: *tona*, to be hot, *sehua*, to be cold, pret. *tonak*, *sehuak*. There are also some verbs which in the preterite convert the last vowel of the present, some into *x*, and some into *z*; and others again which in the preterite may either add *k*, or exchange the final *a* into *x*.

The following abridged conjugation of the verb *tlapohua* shows the application of the preceding rules; with the exception of the variations in the preterite, which must be supplied in conformity with the two preceding paragraphs.

Indicative.

	1st Person.		3d Person.
	Singular.	Plural.	Singular.
Present.	nitlapohua	titlapohua	tlapohua
Imperf.	nitlapohuaya	titlapohuaya	tlapohuahya
Preterit.	Onitlapouh	Otitlapouhke	Otlapouh
Plusq. perf.	Onitlapouhka	Otitlapouhka	Otlapouhka
Future.	Nitlapohuaz	titlapohuaz	tlapohuaz

	Imperative and Present Optative.		*Optative, Sing. and Plur.*	
	Singular.	Plural.	Imperfect.	Future.
1st Pers.	manitlapohua	add *kan* to the singular.	manitlapohuani	nitlapohuazkia
2d. "	maxitlapohua		maxitlapohuani	titlapohuazkia
3d. "	matlapohua		matlapohuani	tlapohuazkia

It must be recollected that, in the preceding verb *tlapohua* which the Spanish grammarians have selected as a paradigm, *pohua* is the root, and that the particle *tla* indi-

cates that something is counted, but without designating what. Had it been to indicate intended that rational beings were counted, but without designating the person, the verb would have been converted into *tepohua;* and had the verb been *tetlapohua,* it would have expressed generally the act of counting without designating the nature of the object to be counted. In all these cases, the verb is conjugated like a neuter verb, and as is exhibited in the preceding table.

The second fundamental division embraces the active transitive verbs, when the object of the action is expressly specified; and as the action is considered as passing from the subject to the object (el paciente), this mode of conjugating, which is common to all the American languages which have been investigated, is generally known by the name of transition. Its principle consists in uniting with the pronoun, which is the subject or agent, certain particles which may be considered as the objective, or accusative case of the pronouns. This is quite analogous to our own languages, when the object is the first or second person; the only difference is that instead of saying, I love thee, thou lovest me, the American says, I thee love, thou me love, &c. But when the object is a third person, by which is meant any thing as well as any other person than the first or second, the objective case of the pronoun of the third person is inserted in the Indian languages, though such object be specially expressed. Thus instead of saying, I see Pedro, I see a house, the Indian says, I him see Pedro, I it see the house.

The particles of transition are,

	1st pers.	2d pers.	3d pers.
Sing.	nech	mitz	k, ki
Plur.	tech	amech	kin

These are never used but united with the pronouns which express the several persons of the subject or agent, *ni, ti,* &c.; and the following table exhibits the various combinations of

that union. The pronouns *ni*, *ti*, lose the final *i*, when united with the objective case *anech*, which begins with a vowel. The pronoun of 3d person, when agent, is omitted.

	me	us	thee	you	him	them
I			nimitz	namech	nik	nikin
thou	tinech	titech			tik	tikin
he	nech	tech	mitz	amech	k, ki	kin
we			timitz	tamech	tik	tikin
ye	amnech	antech			ank	anki
they	nech	tech	mitz	ameeh	k, ki	tikin

The verb, to teach, is *machtia*. He (or they) teach me, us, thee, you, him, them; *nech*, *tech*, *mitz*, *anech*, *k* (or *ki*), *tikin*, respectively prefixed to *machtia*, I teach thee, *nimitzmachtia*; thou teachest us, *titechmachtia*; ye teach them, *ankinmachtia*, &c.

The verb thus compounded is conjugated through all its tenses and moods as the intransitive verbs: thou hast taught me, *otinechmachti*; I will teach them, *nikinmachtiaz*. And it admits, when necessary, the particles *te* and *tla*.

The verb, to forgive, is *popolhuia*; and it has two objects, the person or persons forgiven, and that which is forgiven. If I mean to say generally, that I forgive, without expressing whom or what, I will use, as has already been stated, the pronoun *ni* and the particle *tetla*: *nitetlapopolhuia*. If I mean to say that I forgive my enemy (enemy is *noyaouh*, pl. *noyaohuan*), without saying what I forgive, I will use the compound pronoun *nik* (I him), and the particle *tla*, because that which I forgive is not expressed: and the sentence will be, *niktlapopolhuia in noyaouh*. If I meant to say that I forgive my enemies, I would, for the compound pronoun *nik* (I him), substitute the plural *nikin* (I them), and for the singular *noyaouh*, substitute its plural *noyaohuan*, and the verb would be *nikintlapopolhuia*. If I meant to say that I forgive an injury done to me, without expressing the person whom I

forgive, the particle *te* must be used, and the verb would be *niktepopolhuia.*

From the same verb and the word *tlatlacolli*, a sin, is formed the compounded word *tlatlacolpopolhuia*, to forgive sins. If I express whom I forgive, I will use the compound pronoun *nik*, if there be but one person, and *nikin*, if more than one person. I have forgiven my son his offences (or sins), *oniktlatlacolpopolhuia in nopiltzin.* If I forgive my sons, *onikin* must be substituted in the verb for *onik*, and *nopilhuan* (plural) for *nopiltzin.*

Thus far I have extracted the facts and the most general rules from the grammar of Father Paredes. It seems to me that a clearer and more comprehensive view of the subject may be taken, by considering the, so called, particles of transition, including the particles *te*, *tla*, and *tetla*, as the objective cases of the several pronouns. And the general rule will be that, in all the active verbs which have one or more objects not incorporated in the body of the verb (as in the verb *cakchihua*, to make shoes), such object is always, and without a single exception, indicated by the insertion of the above-mentioned particles of transition, or, as I say, of the objective case of the pronoun.

In that view of the subject, *nech*, *tech*, and *mitz*, *amech*, are the objective cases, singular and plural, of the pronouns of the first and second person. And the objective case of the third person is expressed, according to circumstances, either by *k*, *ki*, (pl. *kin*), or by *te*, *tla*, *tetla*. *K*, *ki*, *kin*, are always used, when the object of the verb, whether it be animate or inanimate, is specially designated and named. In all the other cases, *te*, *tla*, or *tetla* are used, in conformity with the rules already stated. In every case, the pronouns in their said objective case, are always united with that pronoun which is the agent, or in the nominative case. And if the verb has two objects, one specially expressed and the other not, this will be indicated by the union of the objectives *k*

and *te*, or *k* and *tla*, with the pronoun in the nominative case. There is not a single illustration in Paredes' grammar which does not agree with these principles.

The pronouns of reflective verbs are formed in a different way, and seem to be derived from the union of the pronouns *ni*, *ti*, &c., with the possessive pronouns. They are as follows:

Singular.			Plural.		
1st pers.	2d pers.	3d pers.	1st pers.	2d pers.	3d pers.
tino	*timo*	*mo*	*timo*	*amo*	*mo*
I myself.	thou thyself.	he himself,	we ourselves,	ye yourselves,	they themselves,

with which pronouns prefixed to the verb, all reflective verbs (such as, I wash myself, thou washest thyself, &c.,) are in other respects conjugated like other verbs.

The passive voice is very generally expressed by converting it into an active form, through the means of the objective cases of the three persons, viz. *nech*, *mitz*, *ki*, for the singular, and *tech*, *amech*, *kin*, for the plural, omitting the pronoun of the third person which is the implied subject or nominative. It is admitted by the grammarians, that resort must be had to that active form, when the subject or agent is expressed, that such sentence as, "I am loved by God," or, "God is loved by me," or, "I have been struck by some one," must be expressed by the active forms, "God loves me, I love God, some one has struck me." And in that form the verb may be conjugated thus:

Nechtlazotla	(*they* implied)	me love,	means,	I am loved.
Mitztlazotla	(do.)	thee love,	do.	thou art loved.
Kitlazotla,	(do.)	him love,	do.	he is loved.
Techtlazotla,	(do.)	us love,	do.	we are loved.
Amechtlazotla	(do.)	your love,	do.	ye are loved.
Kitlazotla,	(do.)	them love,	do.	they are loved.

But there is also a proper passive voice, conjugated with the ordinary pronouns, *ni*, *ti*, &c. This is formed generally

by adding the particle *lo* to the present of the active. Thus, I count, *nipohua*; I am counted, *nipohualo*. Yet if the present of the indicative ends in a vowel preceded by a vowel, the final vowel is generally suppressed, and *lo* substituted: *nipoloa*, I lose; *nipololo*, I am lost. If the verbs in the active end in *ka* or *ki*, that termination is in the passive converted into *ko*: *maka*, to give; *mako*, to be given. If they end in *na* or *ni*, this termination in the passive may be converted into *no*; or *lo* may be substituted for the final vowel: *ana*, to take; *ano*, or *analo*, to be taken. The preterite is always formed by adding *c* to the present of the passive; thus the verbs which, in the present, were *nipololo*, *mako*, *ano*, *analo*, will in the preterite be *nipololoc*, *makoc*, *anoc*, *analoc*. The passive verb must in every other respect be conjugated according to the rules given for the active.

It is not easy to ascertain in what cases this passive is to be used in preference to the active form. Rules are not given for all cases; some are rather obscure; and it may be inferred that a proper knowledge cannot be attained otherwise than by usage and practice.

It appears, however, that when the person who, in the active form, is the subject or agent, is not expressed, either the passive or the active form may be used. Thus the verb "to bite" is *quahui*. If I mean to say that I have been bit, without saying by whom, this may be expressed passively, *oniquahuiloc*; or in the active form, *onechquahuique*, viz., they have bitten me.

Another general rule is, that, if the verb in the active form has two objects, a thing and a person, this person, if the passive form be adopted, will become the nominative of the sentence. Thus the verb, to give (*maca*), has two objects, the thing given and the person to whom given. Two reals are in Mexican, *ome tomin*. If I mean to express in the passive form the sentence, "they have given me two reals," I cannot say, "two reals have been given to me;" but I must say,

onimacoc ome tomin, I have been given two reals. *Tlaxcalli* means bread. If I mean to say in the passive form, generally, that bread is given, without expressing by whom, or to whom, I must say, *tetlaxcalmaco:* the particle *te* is prefixed in order to indicate that the bread is given to some person. If the person to whom it is given is expressed, for instance, the poor, I cannot, in the passive form, say that bread will be given to the poor; but that *they* (the poor) *will be given bread, tlaxcalmacozke.*

Father Tapia Zenteno expressly states that there is no such verb in the Mexican language as the substantive verb *ser;* and that it is impossible, on that account, to express in Mexican the sentence applied to God, "Ego sum qui sum." And he adds that this defect is common to most other Indian languages. Father Paredes seems to confine the deficiency to the present of the verb. It appears by the illustrations given, that, as in the language of our own Indians, the substantive verb is simply omitted; but the absolute pronoun is generally used. For "I am a sinner," "thou art my father," they say, *nehuatl nitlatlacoani*, I sinner; *tehuatl in tinotatzin*, thou the my father. In both instances the pronoun is emphatically twice repeated: *nehuatl ni*, myself I; *tehuatl ti*, thyself thou. And if an adjective be annexed to the substantive, the pronoun is prefixed to each word. Thou art a good Governor, *tehuatl tiqualli titlatoani;* literally, "thyself, thou good, thou Governor." I am a great sinner, *nehuatl nihuei nitlatlacoani;* literally, "myself, I great, I sinner."

The signification of verbs may be modified in various ways. Amongst these modifications, are those which the grammarians call gerundive conjugations, and the verbs which they designate by the names of compulsive, applicative, reverential, habitual and frequentative.

By gerundive conjugations, are meant these forms: I am going to do such a thing, and, I come from, or, I have been,

doing such a thing; I am going to eat; I come from, or, I have done eating.

The first form consists in adding to the present of the verb the particle *to* for the preterite, the particle *tiuh* (in the plural *tihui*) for the present and future, and the particle *ti* (plural *tin*) for the imperative. It is difficult to find an equivalent for the preterite: *onitlapohuato* is rendered into Spanish by "Yo fui á contar," which seems to correspond with the second form. *Nitlapohuatiuh* means, I am going, or, I will go to count. The present or future of the verb *yauh*, to go, viz., *niauh* or *niaz*, may be prefixed to *nitlapohuatiuh*.

In the second form (I come from), the particle *co* is added to the present of the verb for the present and preterite; *onitlapohuaco*, I come from, or, I have done counting. The particle *kiuh* is added for the imperfect; *nitlapohuakiuk*. And the particle *ki* is added for the imperative. The proper tense of the verb *huallauh*, to come, may be prefixed.

The compulsive form corresponds with that which, in the languages of our Indians, we call the causative form. With some variations, the Mexican form consists in adding to the present of the verb the particle *tia*, or *tlia*. Thus from *nemi*, to live, is formed *nemitia*, to vivify, or to give life. From *nenemi*, to go, to walk, is formed *nenemiltia*, to make one go, to drive, applied to animals. Several verbs form their compulsive irregularly: that of *huallauh*, to come, is *hualhuica*, to make come, to draw. The verb *itta* has three compulsives; *ittaltia*, to make one see something; *ittiltia*, to point out the object; *itztiltia*, to point out the place whence the object may be seen.

Applicative verbs refer the action to another person: he has made a coat for my son; I have made a house for him. They are formed generally by adding the particle *lia* to the original verb, omitting the final *a* of this if it ends in *ia*, and if it ends in *oa*, substituting for this *huia* or *alhuia*; besides which there are many irregularities. The change of signifi-

cation produced by that species of verb is not uniform. To say that some one has built a house, the verb will be *onikchiuh*; but in order to say that he has built the house for somebody, the applicative *onikchihuili* is used. To laugh is *huetzca*; the applicative *huetzkilia* means, to laugh at somebody. *Caki* means, to hear; its applicative *cakilia* means, "to grant a petition." The applicative of *itoa*, to say, to speak, is *italhuia*, or, prefixing the particle *tetla*, *tetlatalhuia*, which means, to speak for others, to be their advocate. From *nahuatl*, the general name for the Mexican language, and *itoa*, is formed the compound verb *nahuatlatoa*, to have the office of interpreter; the applicative of which (prefixing *te*) is *tenahuatlatalhuia*, to serve as an interpreter for another.

Reverential verbs are peculiar to the Mexican language. But the signs by which reverence is expressed pervade the whole language, and are applied to nouns, pronouns, verbs, particles, and, in fact, to every word. This sentence, God by his omnipotence has created by himself all his creatures, is expressed in Mexican as follows: in Totecuiyo*tzin* Dios in icenhuelitliztica*tzinco*, inoma*tzinco* oquimmochihuili*tzino*, oquimmoyocolili*tzino* in cemixquichtintzi*tzin* in itlachihualtzi*tzin*huan. All the parts of words which are in italics are reverential. Were they struck out, the remainder of the sentence would be grammatical and perfectly intelligible, conveying precisely the same meaning, reverence excepted, as the sentence as it now stands.

But it was not to the Deity alone that this homage of respect was paid. These reverential expressions, which, as will be perceived by the above example, extended to every word in the language, were used in reference to father, mother, kin, priests, noblemen, and, in fact, by the inferior class to all their superiors.

With respect to the formation of those reverential terms, it has already been stated that all the nouns were made reverential by the addition of the particle *tzin*, plur. *tzitzin*,

or *tzintli*, plur. *tzitzintin*. The same rule generally applies to pronouns, and with some varieties (generally *tzinco*) to particles. But it is otherwise with the verbs, respecting which several rules and exceptions are given, too numerous for insertion here, but which must be strictly observed in practice. For at this time these terms are, by courtesy, in general use amongst equals; and a deficiency in their proper application is considered by the more polished Indians as a proof of ill-breeding and vulgarity. The fundamental and most general rules are these:

The pronouns used for reverential verbs, and through which they are conjugated, are the same as those of the reflective verbs, viz.:

	Singular.			*Plural.*		
	1st pers.	2d pers.	3d pers.	1st pers.	2d pers.	3d pers.
If the verb be neuter,	nino	timo	mo	tito	amno	mo
If act. and object sing.,	nikno	tikmo	mo	tikto	ankimmo	kimmo
" " " plur.,	nikino	tikimmo	kimmo	tikinto	ankimmo	kimmo

The verb is not thereby made reflective, but preserves the same signification as if not reverential.

The intransitive reverentials are said to be formed from their compulsive form, and the active from their applicative. Or, in other words, the particle *tia* or *ltia* is, in the neuter verb, reverential: the particle *lia* or *huia* added to the present of the indicative of the transitive verb, and the particle *tzinoa* added to the reflective, makes the verb reverential. The same last-mentioned particle added to the other above-mentioned reverential verbs implies a still greater degree of reverence.

The verb *yoli* means, to live; he lives is likewise *yoli;* making it reverential, he lives becomes *moyolitia.* To sleep, or he sleeps, is *cochi;* he sleeps (a lord or priest), *mocochitia.* Thou art hungry, is *titeocihui;* speaking to a superior it is *timoteocihuitia.*

And in the case of transitive verbs, to love is *tlasotla*, with reverence, *tlasotilia*; to take *kui*, with reverence, *kuilia*, &c. Exceptions: *toloa*, to swallow, with reverence *tololtia*; *ka*, to eat, with reverence *kaltia*.

Compulsive and applicative verbs may also become reverential; and this is formed by converting the final *a* of the present into *ilia*.

Habitual verbs are formed by adding *ni* to the present of the indicative of the ordinary verb; and they are used only in that tense: *nitlapohuani*, I have the habit of counting, or, I am used to count.

Frequentative verbs are formed by doubling the first syllable; but their signification varies, meaning sometimes intensity of action, sometimes repetition of action, times, or places. General rules cannot be given in that respect; and the proper meaning cannot be learned otherwise than by usage and practice. *Ahuia*, to be content; *aahuia*, to be very content. *Choca*, to shed tears, to cry; *chochoca*, to cry repeatedly. *Ahuiltia* and *ketza*, to go in and out; *aahuiltia* and *keketza*, to go in and out repeatedly (speaking of an idle boy).

The principal irregular verbs are *ca*, to stand (estar); *yauh*, to go; *huallauh* and *huitz*, to come.

The verb *ca* is conjugated with the pronouns *ni*, *ti*, &c. Present indicative, *nica*, *tica*, *ca*, &c., adding *te* in the plural. Imperfect, *nicatca*. Future, *niez*, *tiez*, *yez*, &c., adding *ke* in the plural. Second and third persons of imperative, *maxie*, *maye*, adding *can* in the plural.

Verb *yauh*, to go, is also conjugated with the pronouns *ni*, *ti*, &c. Present indicative, *niauh*, *tiauh*, *yauh*; plur. *tihui*, *anhui*, *hui*. Imperfect, *nihuia*. Preterite, *onia*, &c., adding *ke* in the plural. Future, *niaz*, &c., adding *ke* in the plural.

Huallauh, to come. This verb is compounded from the verb *yauh* and from the particle *hual*, which means, towards.

It is conjugated like the verb *yauh*. Its preterite is *onihualla*; and its future, *nihuallaz*.

The verb *huitz* has but two tenses: the present, *nihuitz*, to which *e* is added in the plural; and the preterite, *onihuitza*.

The verbs which signify, to be, to go, to come, are often compounded with other verbs. Their meaning is, I am eating, I went crying, I came singing; and they must not be confounded with the other verbs, I am going to sing, or, I come from singing.

In order to compound them, first put down the preterite of the verb, eating, crying, &c.; omit the prefixed *o*; and add the particle *ti*, with the verb, to be, to go, to come, in its proper tense and person.

Thus, in order to form the compound verb, I am preaching (estoy predicando): the verb to preach is *temachtia*, and its preterite *temachti*; to this add the particle *ti*, *temachtiti*; add thereto the first person of the present of the verb *ca* (estar), viz., *ca*, then prefix the pronoun of the first person *ni*; and you will have the verb *nitemachtitica*, I am preaching. Which verb is conjugated through all the tenses and persons, varying accordingly the verb *ca*. In the same manner the verbs meaning, I go preaching, I come preaching, are formed by substituting for the verb *ca*, to be, the verbs *yauh*, to go, and *huallauh*, to come, in their proper tenses: I will go, *niaz* (future of *yauh*), and *nitemachtiaz*, I will go preaching; I came preaching, *nitemachtilihuallaya*, *huallaya* being the preterite imperfect of the verb *huallauh*, to come.

The pronouns of these verbs are *nic*, *nikin*, if the first verb is active; or the corresponding *ni*, &c., if the verb is not active.

Observe that the verb *ca*, first person present *nica*, does not mean I am, which substantive verb is wanted in the Mexican. It means only, to stand, to be in a place (estar); and with the prefixed particle *on*, it means, to have: there is bread, *onca tlaxcalli*; there will be maize, *onyez tlaolli*.

Other verbs are compounded by intercalating the particle *ca*. The verb *quallani* means, to be angry; its preterite is *qualan*; adding to it *ca* and the verb *itta*, to see; and prefixing the proper pronoun, we have *nicqualancaitta in noyaouh*, I look with anger on my enemy, or, I am angry with my enemy. The last verb *itta* is conjugated through its tenses and persons; the *qualan* remains invariable.

Inseparable Particles.

Various inseparable particles may be united with nouns, with the possessive pronouns, and with verbs. They have generally the character of prepositions, but are placed at the end of the word with which they are combined.

Five of these cannot be united with any other words than the possessive pronouns, *no*, *mo*, *i*; plur. *to*, *amo*, *in*, or *im*. But, when thus united with the third persons of such pronouns, they may then be combined with nouns.

These five particles are, *pal*, by, for the sake of. *Impaltzinco in notahenotahuan*, by, or for the sake of, my fathers. (*Pal* is there united with *in*, third person plural of the possessive, and the reverential *tzinco* is added in reference to fathers: literally, their for the sake the my fathers.) *Pampa*, which, as interrogative, means "why," and in answering, "because." *Huan*, in company with. *Tloc*, near, adjacent. *Icampa*, behind.

Nine particles are immediately united only with nouns; but when thus compounded, the possessive pronouns may be prefixed. The nouns ending in *tl*, *tli*, *li*, *in*, lose, as usual, these terminations. Verbal nouns ending in *k* or *ki*, and those ending in *hua*, *e*, *o*, add *ca* when thus compounded.

These prepositions are *k* and *ko*, in, within; *tletl*, fire, *tleco*, in the fire; *acalli*, a ship, *acalco*, in the ship, (*acalli*, a water-house, from *calli*, house, and *atl*, water; *atl* losing its termination *tl* in compounded words).

Nal and *nalco* are compounded only with *atl*, water; *anal analco*, on the other side of the sea or of the river. *Can* means place; *kalli*, good, *kalcan*, a good place. *Michin*, a fish, whence *michhua*, lord of fishes; and thence *michhuacan*, the place of the lords of fishes, that is to say, *mechoacan*. *Tla* means abundance; *xochitl*, a flower, *xochitla*, a flower-garden. *Teuh* is an adverb, which means, in like or similar manner. The particles *n* and *yan*, refer to locality; *nemi*, to live, *nemian*, the place where one lives (derived from *nemia*, the imperfect of the verb). *Cochi*, to sleep, *nocochian*, my bed. From *ceuh*, preterite of the verb *cehui*, is formed *cuhyan*, place of rest; *in iccuhyan in atl* (literally, the it rests where the water), the place where the water ceases to run, or in which it falls.

Nine other particles may be united either with nouns or pronouns.

Pan means, in, on, above. This as well as the other particles which have the character of prepositions, may be combined with every person of the possessive pronoun: *nopan*, on me, *mopan*, on, or, above thee; *ipan*, above him, or it; *topan*, above us, *amopan*, above you, *inpan*, above them. It may also be combined with nouns: *tlatlacolpan tinemi*, in sin thou livest; *apan omic in noteachcauh*, water in died he the my elder brother. In this last example, *apan* means, "water in;" *a*, is "water," from *atl*, which, in composition, loses its termination *tl*. But there are cases where that particle *pan* must be united to the pronoun in preference to the noun. In the sentence, "above the mountain," you must say, *ipan in tepetl*, it above the mountain, and not *in tepetlpan*.

Tlan means, with, next; and is generally united with the noun by the particle *ti*; *nocaltitlan*, next to my house; *tepetitlan*, adjacent to the mountain. In both cases *tlan* is united by *ti* with the preceding noun, my house, the mountain; *tepetl*, mountain, being compounded, loses its final *tl*.

Ca is also united to the noun by the conjunctive particle *ti*; and it means the instrument with which an act has been perpetrated; if a man has wounded another with a stone it is, *tetica* (from *tetl*, a stone); if with a stick, it will be, *quauhtica*. United with the possessive pronouns, *ca* means, for, for the sake of, concerning.

Tech means, in; *huic*, *huicpa*, opposite, against; *tzalan*, between; *nepantla*, in the middle of; *nahuac* (like *tloc*), means, next, adjacent. *Icpac* means, upon, above; and it is united with nouns by the particle *ti*.

There are also some particles derived from certain nouns which may be united with pronouns or nouns.

From *ixtli*, face, visage, are derived *ixco*, on the face or surface; *nixco*, on my face; *atlixco*, on the surface of the water (this case is an exception, in which *atl*, water, though compounded, does not lose its final *tl*). *Ixpan*, *ixtla*, *ixtlan*, before, in presence of, both derived from *ixtli*, united with *pan* or *tla*.

From *itiil*, the belly, is derived *itic*, within; *teitic*, within some person; *tlaitic*, within something; *atlitic*, within the water.

Tepotztli and *cuitlapantli* both mean, shoulder, back; whence are derived *tepotzco* (united with the noun by the conjunctive participle *co*) and *cuitlapan*, both of which mean, behind.

The particle *po*, alone or compounded, may be united with nouns and possessive pronouns, and means equality or similarity; *nehuatl nimopo*, I am thy equal. Compounded with *huan* it means, to be of the same nature, nearly related. From that particle is derived the verb *potia*, which means to equalize; *onimitznopoti*, I have made thee my equal.

Verbal nouns, ending in *ni* and corresponding with the Latin *tor*, *trix*, are formed by adding *ni* to the present: from *nemi*, to live, *nemini*, the living; from *tlatlacoa*, to sin, *tlatlacoani*, sinner; from *cakchihua*, to make shoes, *cakchihuani*,

shoemaker; from *centlalia*, to unite, *tlacentlaliani*, he who collects inanimate things.

Verbal nouns ending in *oni*, correspond with the Latin *bilis* or *dus*; *tlasotla*, to love, *tlasotlaoni*, amiable, worthy to be loved; *mahuiztilia*, to honor, adding to this *lo* for the passive, and *ni*, *mahuiztililoni*, respectable. From *tlaxcalli*, bread or tortilla, and *chihua*, to make, *tlaxcalchihualoni*, the instrument with which bread or tortillas are made. From *miki*, to die, *mikoani*, cause of death, poison.

Verbal nouns ending in *tli*, *li*, have the same meaning as our participle past, something which is loved, seen, &c. They are formed by converting the *o* of the passive into *li* or *tli*, and prefixing the particle *tla*, which designates things. From *inayalo*, passive of *inaya*, to conceal, is formed *tlainayalli*, a thing concealed; from *teko*, passive of *teki*, to cut, *tlatektli*, a thing cut off.

Other verbal nouns ending in *tli*, are formed from the preterite tenses ending in *uh*, *x*, *z*, *n*, *tz*. From *pouh*, *tlapouhtli*, a thing counted: from *inax*, preterite of *inaya*, to conceal, *tlainaxtli*, a thing concealed. Some are irregulars: *cui*, to cut, *tlacuicui*, to cut a stone or beam; *tlacuicuitl*, a stone or beam cut or worked.

Verbal nouns ending in *liztli*, are very common; and signify the act of doing something. From *tlasotla*, to love, *tetlasotlaliztli*, the act of loving, love. They are formed from the future, changing *z* into *liztli*; from *nemi*, *nemiliztli*, life. Those ending in *ca* and *ki* convert it into *kiliztli*; from *miki*, to die, *mikiliztli*, death.

In these verbal nouns a distinction is always carefully made between active and passive; whether by the word *love* is meant the love I have for another, or the love which another has for me; generally, whether the act is from me to another, or from another to me. The first is active, and in this case is expressed by the verbal nouns ending in *liztli*; the other is passive, and is expressed by verbal nouns ending

in *oca*. These are formed by adding *ca* to the passive of the verb and prefixing the possessive pronouns *no*, *mo*, *i*, &c. The verb *mahuizpoloa* means, to disgrace, to dishonor: the disgrace inflicted by me upon another is *mahuizpoloaliztli*; that inflicted by another on me is *nomahuizpoloca*: this last expression is derived from the passive *mahuizpololo*, to which is added *ca*, and prefixed the possessive pronoun *no*. The particles *te* and *tla* are inserted in compounding these verbal nouns, in the same cases and on the same principles as in verbs. Those ending in *ca* may also be formed from neutral verbs and from adjectives ending in *k*, *c*. From *yoli*, to live, *noyolca*, my food; from *iztac*, white, *iztaca*, whiteness.

Verbal nouns corresponding with the participle of the present, "he who loves," are formed from the preterite of the indicative, omitting its first vowel *o*, and prefixing *te* or *tla* when the verbs are active. *Cuiloa* is the root of the verb *tlacuiloa*, to paint something; the preterite is *otlacuilo*, from which *tlacuilo*, the painter. In the verbs, the preterite of which ends in *h*, *x*, *z*, *n*, *c*, the verbal noun is formed by adding *ki* to such preterite. The preterite of *miki*, to die, is *mik*, from which *mikki*, the dead.

Nouns ending in *yotl* or *otl* are abstract substantives. They are formed from nouns ending in *tl*, *tli*, *in*, by changing these terminations into *yotl*. From *Teotl*, God, *teoyotl*, the Divinity; from *tatli*, father, *tayotl*, paternity. Other nouns ending in *k*, *ki*, *hua*, *e*, *o*, and some others, add *cayotl*. From *coztik*, yellow, *coztikayotl*, yellow color; from *topile*, an alguacil, *topilecayotl*, the office of alguacil; from *huei*, great, *hueicayotl*, greatness.

Some derivatives are formed from nouns ending in *otl* by omitting the final *tl*. From *tenyotl*, fame, *tenyo*, a famous person; and verbs are formed from this by adding to it *tia*: *tenyotia*, to give fame, to render famous.

Nouns ending in *hua*, *e*, *o*, are called possessive and signify, possession, dominion. They are formed by changing

the final *tl* or the final *tli* preceded by a vowel into *hua*; those ending in *itl* preceded by a vowel by changing *itl* into *ye*; those ending in *lli* by changing this into *le*; those ending in other terminations, if it be a consonant, by adding either *hua* or *e*; if ending in a vowel, by adding *hua*. From *calli*, house, *cale*, master of the house; from *tlantli*, tooth, *tlane*, he who has teeth (applied to infants); from *atl*, water, *ahua*, the Lord of water; from *tepetl*, mountain, *tepehua*, Lord of the mountain. (These are names given to people or inhabitants of some district or town.) From *tilmatli*, a cloak, *tilmahua*, he who wears a cloak.

From the nouns expressing the names of districts or cities, are formed other nouns which signify the inhabitants of such places; and they are generally terminated in *catl*. From Mexico or Tezcoco, *Mexicatl* and *Tezcocatl*; from *Chololla*n, *Chololtecatl*; from *Michhuacan*, *Michhuacatl*; from *Quauhtitlan*, *Quauhtitlantlacatl*.

There are verbs ending in *ti* and *tia* which are formed from nouns, and when neuter, mean, to make oneself, to become that which is signified by the noun from which such verb is derived. And if to such verb the termination *lia* be added, the verb will become active and mean that the action applies to another. Thus from *kalli*, good, is formed *kalti* or *kaltia*, to become good; and from this, *kaltilia*, to make another good. But the verbs ending in *tia* derived from substantive nouns, when active, signify to supply or to provide; *calli*, house, *caltia*, to provide a house. If the verb be reflective, it means to appropriate or to use the thing; *nicnocaltia in mocal*, I appropriate to myself, or I use thy house. When the preterite of the derived verb terminates in *tic*, adjectives are sometimes formed. *Tetl*, a stone, *teti* or *tetia*, to become hard, *tetic*, hard (as a stone); from *itzti*, to become cold, *itztic*, any thing cold. The verbs ending in *ti*, *tia* are generally formed from nouns ending in *tl*, *tli*, *li*, *in*, which are

converted into *ti* or *tia*. Nouns ending in *ki* form the verb by converting *ki* into *kati*.

Other verbs ending in *huia* signify working with, or transfer the quality to some other object. And such verbs are formed by converting the terminations *tl*, *tli*, *li*, *in*, into *huia*; and by adding *huia* to nouns of other terminations. *Iztatl*, salt, *iztahuia* to salt (meat); *teocuitlatl*, silver, *teocuitlahuia*, to plate with silver.

It appears that when words are compounded together, the noun which is placed first loses its final termination; but in other respects the words remain entire. In this mode of compounding words, the Mexican language seems to differ from that of the Algonguin Tribes. In this, three, four or more words are often compounded into a single word, which preserves only one syllable of each of the words which contribute to its formation. It has been seen that the union of the nominative and objective cases of the pronoun with the verb, together with the occasional intercalation of one or more particles produced Mexican words sufficiently long. Considering this agglutination as a single word, combinations of two words only appear to be the most common; but instances are frequent of compound words formed by the union of three or more primitive. Such examples have often been quoted. General rules are not given for the formation of compounded words. Some illustrations will be added to those which have occurred in the preceding pages.

From *Teotl*, God, and *tlatolli*, word, is formed *teotlatolli*, divine words. From *mecatl*, rope, and *tepuztli*, iron; *tepuzmecatl*, an iron chain.

From *xochitl*, a flower, and *tequi*, to cut, is formed *nixochitequi*, I cut flowers; from *nacatl*, meat, and *qua*, to eat, *ninacaqua*, I eat flesh. From *tletl*, fire, and *lehuatza*, to roast, is formed *nictlehuatza in nacatl*, I roast in the fire meat. From *tlaxcalli*, bread, and *temolia*, to seek, to be in search of, is formed *nikintlaxcaltemolia in nopilhuan*, I seek, am in

want of bread for my sons. In the two last instances, the pronouns *nic*, and in the plural, *nikin*, are substituted for the ordinary pronoun *ni*, because the objects *nacatl*, and *nopilhuan*, my sons, are respectively expressed.

In the union of the noun with another noun, or with neuter or passive verbs, similitude is often implied. From *yollotli*, the heart, and *xochitl*, a flower, is formed *yolloxuchitl*, a flower that has the appearance of a heart. *Cuicatl* means a song, *xochitemono in cuicatl*, songs are sought for as flowers (from passive of *temolia*).

From *ixtli*, eye, and *cocoya*, to be ill, is formed *ixcocoya*, to labor under an infirmity of the eyes. From *yectli*, good, and *tlacatl*, person, *yectlacatl*, a good man.

The verb in composition has sometimes the meaning of an adverb. From *chicahua*, to make, is formed *nimitzchicahuacatlasotla*. I thee much love: in which instance the verb *chicahua* means only "much;" but *ca* is intercalated.

Adverbs are often compounded with nouns and verbs. *Nentlacatl*, a man of no utility or knowledge; *ilihuizcehuitl*, *ilihuiztlatoa*, a woman of little consideration, to talk without consideration; both formed from the adverb *ilihuiz*.

Idiomatic Locutions.

The preterite designates, in this language, a thing not only past, but which no longer exists. Thus in order to say that there was a God before the world commenced, you must use the present tense, "there is a God," and not the preterite, "there was," which would imply that there is now no God.

The present is also substituted for the preterite in such sentences as this: when I arrived at my house I came in good health, you must say, I come in good health. And the future is used instead of the preterite in such sentences as this: four years before the Spanish arrived, you must say, before the Spaniards will arrive.

The numeral *ce*, one, is often prefixed to nouns as an indefinite article, and in that case its plural is *ceme*. A man speaking of another will say, *ce tokichein*, (the first letter *t* stands for *ti*, we) one of us men, literally, one we men; but a woman, speaking of another, cannot express herself in that way, and she must say *ce cihuatl*, a woman. Yet the man, speaking of woman, will say, one of you women, in which case he will use the plural *ceme* and that of the verb, *ceme azcihua antlalaqualchihuazque*, one of you women will prepare the food; *az* instead of *an*, *ye*; *tla* inserted because the species of food is not specified; *laqual*, food; *chihuaz*, future of *chihua*, to make; the final *que* may be omitted. In the following sentence: the Governor has killed one of his dogs, I may say either *ocmictili in tlatoani ceme in itzcuinhuan*, or, instead of *ocmictili*, it has killed, *okimmictili*, them has killed, using the plural transition, though the object, one of them, is singular.

Speaking of persons of his own nation, the Mexican will say, they are as ourselves; *ca can titehuan* (compounded of the two pronouns *ti* and *tehuan*). But speaking with Indians of another nation, or with Spaniards, he will not say simply, they are as yourselves (*aamehuan*), but, they are Indians or Spaniards as yourselves.

When two nominatives in the singular govern a plural verb, and one of these is the pronoun *I* or *thou*, it is suppressed. Instead of saying, my wife and I have quarrelled, the Mexican will say, *otitomiclique nocihuauh*, we have quarrelled together my wife. Instead of saying, you have eat you and your father, he will say, *oantlaquaque in motatzin*, you have eat your father; but observe that this equivocation does not exist. The species of food eaten is not expressed: this is indicated by the intercalation of *tla*, and the word is literally, ye it have eat. Had your father, *motatzin*, been the object of the verb, this, instead of *oantlaquaque*, would have been *onkquaque*.

No mention is made of a special plural, or of a distinction

in that number between inclusive and exclusive, or between present and absent. But Father Tapia Zenteno gives the declension of *Nehuan*, both; viz., we both, *tonehuan*; ye both, *amonehuan*; they both, *nehuan*. And to this he gives a plural by adding *tin*. What difference this addition makes is not explained.

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(2) TARASCA,

OR LANGUAGE OF MICHOACAN.

Extracted from Father Diego Basalenque's Grammar, published by Father Nicolas de Quixas, Mexico, 1714.

THE sounds expressed by the letters *f* and *l* are wanting. No word begins with the letters *b*, *d*, *g*, *i*, and *r*. The *k* has a strong sound distinct from *c*. The letter *s* is often intercalated for euphony's sake. It must be inserted between *h* and *i*, when a word ends with *h* and the next begins with *i*. At the end of a word, it signifies *same* or *self*: *hi*, I; *his*, I myself. When a word ends in *s* and the next begins with *h*, the letter *x* is substituted for both. That letter *x* at the end of a word indicates the plural. *Ph* never has the sound of *f*; the *h* after *p* only indicates an aspiration of the vowel which follows: *p-hica*.

Hati, third person singular of the pronoun used in conjugations, may be converted into *ndi*. The *p* immediately following *m* is converted into *b*. The *r* and *t* next following *n* are converted into *d*. And *c* and *q* next following *n* are converted into *g*.

Nouns.

Three species of substantive nouns are distinguished, rational, irrational, and inanimate. The two last species are

indeclinable in the singular. The plural of irrational animals is formed simply by the addition of the particle *echa*. Two other particles are used in order to express the plural of inanimate things; viz., *van* and *harandeti*, which mean, *many, much*. Five words of this species use, however, the particle *echa* in the plural; viz., *vata*, mountain; *ambocuta*, street; *ahchiuri*, night; *tzipaé*, morning; *hosqua*, star.

But Father Basalenque asserts that the nouns of rational beings, and also the adjectives when connected with such nouns, are actually declined. It must be observed that his grammar is, from beginning to end, arranged as if it was a Latin grammar; a method generally inapplicable to Indian languages, and the use of which may throw some doubt on the conclusions of the Father.

The declensions of the substantive and that of the adjective *ambaqueti*, "good," are, as will appear, perfectly similar.

	Rational Substantive.		Adjective.
	Singular.		*Singular.*
Nomin.	Angel,	the Angel.	Ambaqueti, ... good.
Genit.	Angel everi,	of the Angel.	Ambaqueti everi.
Dat.	Angelni,	to the Angel.	Ambaquetini.
Accus.	Angelni,	the Angel.	Ambaquetini.
Vocat.	Angele,	O Angel.	Ambaquetie.
Ablat.	Angelnihimbo,	by the Angel.	Ambaquetinhimbo.
	Plural.		*Plural.*
Nomin.	Angel echa,	the Angels.	Ambequeteicha.
Genit.	Angelechaeueri,	of the Angels.	Ambaquetiechaeveri.
Dat.	Angelechani,	to the Angels.	Ambaquetiechani.
Accus.	Angelechani,	the Angels.	Ambaquetiechani.
Vocat.	Angelechae,	O Angels.	Ambaquetiechae.
Ablat.	Angelechanihimbo,	by the Angels.	Ambaquetiechanihimbo.

It must be observed that *everi* is the possessive pronoun, *his*; that *ni* appears to be the abbreviation of *ini*, or *hini*, the objective case of the pronoun of the third person (him, it); that the *é* of the vocative is the same as in the Mexican language: *himbo* of the ablative is said to be an adverb; but it has clearly the character of a preposition. *Nini*, or *ni*, the

dative and accusative or objective case of the third person of the pronoun, may, in the Tarascan, be annexed either to the noun or to the verb, perhaps to both: *He hini pampezcahaca Pedroni*, or, *Pampezcahaca Pedroni;* him I love Pedro, or, I love Pedro him.

It is more difficult to extract from Basalenque's Grammar a proper arrangement of the pronouns.

The absolute, or, as he calls them, primitive pronouns, are:

	Sing.	*Plur.*
1st pers.	Hi	Hucha
2d "	Thu	Thucha
3d "	Hinde	Hindex

But the third person may be expressed in a variety of other ways: *i*, plur. *ix;* *ima*, plur. *imax.* In the plural, *imax* is applied to persons far off; *thsimi* to persons present; *thsima* to persons very far off; and *hicha*, to persons who are seen. And in the objective case, *hini* applies to persons we do not see; and *in*, or *ini*, to persons who stand before us.

The possessive pronouns, which the Father calls the genitive, but which he translates by *my*, *thy*, &c., are according to him:

	Singular.	*Plural.*
1st pers.	Huchevi	Hucha everi
2d "	Thucheveti	Thucha everi
3d "	Hinde everi Hicheviremba emba	Hindex everi Hicha everi embaecha (rarely used)

The pronouns used in the simple conjugation of verbs, (that is to say, without including the pronoun in the objective case,) are altogether different, as will appear by the conjugation of the indicative of the verb *pa*, to carry.

Present	Sing.	1st pers.	Pa ha ca
		2d "	Pa ha care
		3d "	Pa ha ti
	Plur.	1st "	Pa ha cacuche
		2d "	Pa ha cahtsi
		3d "	Pa ha tix

Imperfect	1st pers.	Pa hambi ca
Preterite	" "	Pa ca
Plusq. perf.	" "	Pa p-hi ca
Future	" "	Pa va ca
Infinitive Present,		Pa ni
Preterite,		Pa rini

The infinitive is designated by *ni*, *rini*, without pronouns. The four preceding tenses are conjugated as the present, viz., *ca*, *care*, *ti*, &c., for the several pronouns. It is clear, therefore, that the present, imperfect, plusq. perfect, and future, are respectively distinguished by the particles *ha*, *hambi*, *p-hi*, and *va*; that the preterite is expressed by the root of the verb without any such particle; and that the terminations *ca*, *care*, *ti*, for the singular, and *cacuche*, *cahtsi*, *tix*, for the plural, are, or perform the office of, the three persons of the pronoun; and that by them alone the numbers and persons of the verb are distinguished.

In the present, *siraha*, or *sindaha*, is sometimes substituted for the simple characteristic *ha*; in the imperfect, *hanga* for *hambih*; and the letter *s* may, in the preterite and plusq. perfect, be inserted after the root of the verb: *pasca* and *pasphica* for *paca* and *pap-hica*.

A compounded future is formed by prefixing the particle *thuvin* to the simple future. The imperative has no distinctive particle and no pronoun in the second person singular, and is conjugated as follows:

	Sing.	*Plur.*
1st pers.	Papa	Papa cuche
2d "	Pa	Pa he
3d "	Pa ve	Pa vex

In the optative and subjunctive, the pronouns become, singular, *iquini*, *iquire*, *iqui*; in the plural, *iquicuchehe*, *iquihtsi*, *iquix*, all prefixed to the verb. The particle *piringa* is placed in the imperfect after the verb (*iquini papiringa*, &c.); and the particle *tziris* is placed in the preterite and

plusq. perfect between the pronoun and the verb. The infinitive is, present, *pani*, to carry; preterite, *parini*, to have carried.

The passive voice is formed by inserting the particle *ke*, or *ga*, or *nga*, between the root of the verb and the particle characteristic of the tense: *pahaca*, I carry; *pangahaca*, I am carried; and so on through all the persons and tenses.

In the compound conjugation, commonly called transition, in which the pronouns both in the nominative and in the objective case are united with the verb, it would seem that the last mentioned pronouns (*ca*, *care*, *ti*, &c.) are never used. A combination of the nominative and of the objective cases of the primitive pronouns is resorted to. The rules by which this combination is effected are not laid down; and the only illustrations given are:

I love thee	Hiquini pampzcaha.
I love him	Hihini "
We love thee	Huchaxsini "
We love him	Huchahini "
Thou lovest me	Thureni, or Hindeni "
Thou lovest him	Thuhini "
Ye love us	Thuchahtzini "
Ye love him	Thuchahini "
He loves me	Hindereni "
He loves us	Hindequini "
He loves you	Hindexsini "

Whence it would seem that the objective cases of the pronouns are,

	Sing.	*Plur.*
1st pers.	reni, deni	itzini, quini
2d "	quini	xsini
3d "	ini	

The grammar is, however, very imperfect in this respect. One rule is given, viz., that if the subject, or pronoun in the nominative case, be in the plural, the object, or objective case

of the pronoun, even though in fact singular, must be put in the plural: he teaches me, is *ima hindeni* (he me); they teach us, *hindex tzini* (they us); they teach me, *hindex tzini* (literally, "they us," instead of *hindex hindeni*, "they me.")

According to Father Basalenque, there is a substantive verb, in the infinitive, *eni*, to be. The root of this verb is the single letter *e* prefixed to the particles of tenses and to the pronouns. *Ehaca*, I am; *eca*, I have been; *evaca*, I will be, &c. As no illustration whatever is given, it is impossible to ascertain whether this verb implies the notion of existence, or whether it corresponds with the Spanish *estar*. It is certain that it is not used in the formation of the passive voice; and it does not appear that it is used for the purpose of indicating attributes.

Various classes, or forms of verbs are formed by union with certain other verbs, by the insertion of certain particles, or by the duplication of the first syllable. Compulsive or causative form, by union with verb *erani*, to make another be, or do; passive, *erangani*, to make oneself be, or, do. Intention, or, wish to do, by union with verbs *ecuicani*, or *nguechaca*, I desire, want; *tirehaca*, I eat; *tiringuechahaca*, I want to eat. Frequentative verbs, implying repetition of action, are formed by prefixing, *is*; *is tirehaca*, I eat frequently, repeatedly. Habitual verbs are formed by the insertion of the particle *nsta*; *panstahaca*, I am always carrying; and from *verani*, to cry, *veranstani*, to be always crying. Continuity of action is expressed sometimes by the duplication of the root of the verb, sometimes by suffixed particles: *tirexaca*, to be eating. But, by substituting *xama*, a new form is obtained, corresponding with that called "gerundive," in the Mexican.

Some verbs are distinguished by the insertion of the particles *pe*, which means, "generally;" *va* which means plurality, and *cu* which denotes the singular. *Inspeni*, to give generally; *insvani*, to give to many; *inscuni*, to give to one person.

Verbs ending in *kui*, *nani*, *rani*, lose in several of their tenses, the syllables *ca*, *na*, *ra*; and there are many other irregular or defective verbs.

Verbal nouns are formed in different ways. By converting the final *ni* of the infinitive into *ti* or *ri*, a noun is formed corresponding with the participle present. From *pireni*, to sing, *pireri*, he who sings; *tzipeni*, to live, *tzipeti*, he who lives.

Nouns which may supply the participle passive, are formed by adding *ta* to the preterite of the indicative. From *paca* preterite of *pahaca*, is formed *pacata*, that which is carried, a burthen; from *tireca* preterite of *tirehaca*, I eat, is formed *tirecata*, that which is eaten, food.

Various particles prefixed are used in placing together or counting animated beings, or things, according to the nature of such beings or things; *echu* for things broad, paper, tortillas; *churuh* and *quiras* for things round, stones, oranges; *umba* for men; *chuvi* and *xancha* for beings or things with four feet, whether a quadruped, or a bench. These particles are converted into verbs by adding *tani*: *quiratani naranxas*, to place together oranges; and the place, above or below, may be indicated by inserting *tsi*, or *chu*: *quirahtsitani*, to place above.

A great number of particles intercalated, modify or alter the meaning of the verb, and sometimes of the nouns.

Cuxa implies sadness, thoughtfulness. *Pa* and *po* seem to correspond with one of the Mexican forms: *pireni*, to sing; *pareponi*, to go singing; *pireponi*, to come singing. *Ra* and *ta* imply giving to another: *tirehaca*, I eat, *tirerahaca*, I give to eat to another; *itsi mehaca*, I drink, *itsi matahaca*, I give to drink to another. But if both particles are united, *rata*, it gives to the verb the compulsive or causative form; thus, *tarehaca*, I till the ground, *tareratahaca*, I make another till the ground. *Quare* is reflective; *tarerataquarehaca*, I make another till the ground for me. *Tza*, immediately;

mitani, to open; *mitzatani*, to open immediately. *Pera* and *betepera*, signify reciprocity. *Do* and *ro* are suffixed particles designating place, locality.

Some particles are called special, inasmuch as they refer to the parts of the body, or of some place. The following is a specimen:

The verb *hoponi* means, to wash. By inserting certain particles between *po* and *ni*, the respective parts of the body which are washed will be designated. *Hopocuni*, to wash the hands; *hoponduni*, to wash the feet; *hopomuni*, to wash the mouth; *hoponchani*, to wash the throat; *hopongarini*, to wash the face; *hopoxuni*, to wash the arms. The want of explanations and of a vocabulary, puts it out of my power to ascertain whether there is any etymological connection between those particles and the parts of the body to which they refer.

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(3) MAYA,

OR LANGUAGE OF YUCATAN.

Extracted from Father Beltran's Grammar, Mexico, 1746; and the manuscript notes of Don Pio Perez, Giefe Politico of Peto, Yucatan, given to Mr. John L. Stephens, 1842.

THE following letters are said to be wanting in this language: d, f, g, j, q, r, s, v. Two characters are used, in which the sound of *d* is found, viz. the inverted *c* which is pronounced *dz*, and the *ch* with a bar across, which is pronounced *dsh*. Don J. P. Perez moreover states, that the sound *s* does occur; that the *h* is sounded like the Spanish j; and that the syllables *ce*, *ci*, are sounded as the Spanish *que*, *qui* (in English, *ke*, *ki*). A difficulty occurs in this respect, because *k* has in the Maya a different sound from our *c* before a, o, u; *co* and

ko have a different sound, that expressed by *k* being special to the Maya, and difficult to be pronounced. This, as well as the pronunciation of *pp* and *th* barred (not the English *th*), can only be acquired by hearing them. The *x*, according to Perez has the sound of the English *sh*. The vowels have two sounds, one like the Spanish, the other nasal.

There is some distinction, though rarely perceptible, between rational beings, animals, and inanimate things. Particles which have the character of the article, *ah* for the masculine, and *ix* for the feminine (sounded generally *h*, and *x*), are prefixed to the nouns of rational beings; *ah cambezah*, master, *ix cambezah*, mistress. The sexes of animals are distinguished by prefixing *xibil* for the male, and *dchupul* for the female.

The plural of all nouns is formed by adding *ob* to the singular; *ich*, the eye, plural, *ichob*. The plural of pronouns is formed in a different way, as will be seen hereafter. Adjectives derived from verbs and ending in *nac*, lose in the plural their two last syllables and substitute *lac; banacnac, kinicnac, kakatnac*, are in the plural, *banlac, kinlac, hatlac*. When the substantive and the adjective are united, the sign of the plural is added only to the substantive, which substantive is always placed after the adjective: man, *uinic*, good, *utzul*, good men, *utzul uinicob*.

Most nouns have two terminations; one, when the signification is general or indeterminate, to which *il*, and sometimes *el*, is added, when it is intended to designate the species, quality or use of the thing or person; *chee* means generally tree and wood: if it be intended to specify the kind of tree, or the use to which the wood is put, the word will be *chèil*. *Hun* is the numeral "one," in the abstract. Prefixed to a noun it is used as our indefinite article, *a, an;* but it then becomes *hunppel;* a man, *hunppel uinic*. Yet, according to Beltran, the words father and mother are generally, and without indicating of whom they are father or mother (no deno-

tando cuyo, cuya) *yambil, naail;* and if expressing of whom (cuyo, cuya), they are father and mother, *yum, naa.* Which seems to be the very reverse of Perez's statement.

The comparative is formed by adding to the adjective, *il,* or its last vowel and *l,* and by prefixing *u* or *y,* which is the third person of the pronoun; *Tibil,* good, comp. *Tibilil; utz,* good, comp. *yutzil, yutzul; lob,* bad, comp. *ulobol, ulobil; kaz,* ugly, comp. *ukazal, ukazil.*

The adverbs *azab, paynum,* which mean, "more," are also used, specially when united with proper names of persons. *Azab utz* (or, *paynum utz*) *Pedro cexma Joan,* more good Peter than John; and not *yutzil* Pedro. *Paynum* is also used in connection with *okol,* above. *Utz Joan paynum, y okol Pedro,* good John more, he above Pedro.

There is no proper superlative; it is supplied by prefixing *kach,* very, much; *lob,* bad, *kachlob,* very bad.

In the vocative, when calling or addressing a person, *e* is added to the noun in the Maya, as in the Mexican.

The prepositions, *tial, oklal, men, menel,* by, for; *ti, etel, etum,* with; *ti, t,* in; are often united with the nouns and with the pronouns, in which last case they are placed after the pronoun.

Pronouns.

There are four pronouns, all which are used in conjugating verbs. But the two last are also used, united with nouns, or as possessive pronouns, and never alone, or as absolute pronouns.

	1st.		2d.		3d.		4th.	
	Sing.	*Plur.*	*Sing.*	*Plur.*	*Sing.*	*Plur.*	*Sing.*	*Plur.*
1st pers.	ten	tu-on	en	on	in	ca	u	ca
2d do.	tech	te-ex	ech	ex	a	aez	au	auex
3d do.	lay	lo-ob	laylo	ob	u	uob	y	yob

The third and fourth pronouns, whether used in conjugations, or as possessive pronouns, are always used for the same

purpose; the only difference being that the third pronoun is always used when the word united with it, be it verb or noun, commences with a consonant; and that the fourth pronoun is generally used when the word with which it is united, begins with a vowel. It will be perceived that in the second and third persons of the third and fourth pronouns, the plural is formed by adding respectively, *ex* and *ob* to the singular. Whether united with verb or noun, these signs of the plural are always placed after such verb or noun. When used as possessive pronouns, *ob* must be added to the noun whenever this is in the plural; and in that case the plural *loob* of the first pronoun is substituted for the second *ob*. This will be explained by the following examples.

							4th Pronoun.		
in dshac	my	bed	in dshacob	my	beds		u al	my daughter
a dshac	thy	bed	a dshacob	thy	beds		au al	thy daughter
u dshac	his	bed	u dshacob	his	beds		y al	his daughter
ca dshac	our	bed	ca dshacob	our	beds		ca al(cal)	our dau'r
a dshac ex	your	bed	a dshacob ex	your	beds		au al ex	your dau'r
u dshac ob	their	bed	u dshacob loob	their	beds		y al ob	their dau'r

These possessive pronouns also unite with the prepositions above stated; *intial*, for me; *atial*, for thee; *utial*, for him, &c. But if a preposition beginning with a vowel such as *oklal*, be used, then it must be united with the fourth pronoun; *uoklal*, *auuoklal* (*auoklal*), *yoklal*, &c. By adding the particle *ba* to the third pronoun, a fifth is formed, *inba*, *aba*, *uba*, &c., myself, thyself, himself, which is used in the conjugation of reflective verbs.

The manner in which all the pronouns are used, when united with verbs, will appear in the subsequent paradigms of conjugations.

Verbs.

Father Beltran and the former grammarians of this language count four conjugations. But the fundamental distinc-

rest in this, as well as in the Mexican and generally in the other languages of all these nations, consists in that of neuter or intransitive, and active or transitive verbs. And the variations refer either to the several pronouns which are used, or to the particles by which the tenses are distinguished.

The first conjugation of the Maya comprehends all the neuter or intransitive verbs; and the three last are only subdivisions of the active or transitive verbs. These three last conjugations, throughout all their tenses and moods, have precisely the same pronouns; and there is between them no other difference, and it is a slight one, than in the particles by which the simple tenses are distinguished. The simple tenses are, the present, preterite, and simple future of the indicative, the imperative and the present of the infinitive.

The second conjugation includes all the transitive verbs of more than one syllable, which terminate in *z*; the second consists of all the transitive verbs of one syllable; and the third comprehends all the transitive verbs of more than one syllable, the root of which does not terminate in *z*. The termination of the present of the verbs of the first conjugation is *l*, preceded by a vowel; or, in more general terms, these terminations, *al, el, il, ol, ul*, added to the root of the verb, are used whenever a verb may be considered as intransitive. For in the Maya, as well as in the Mexican, transitive verbs in the abstract, that is to say, when the object of the verb is not designated, are considered and conjugated as intransitive, because, in that case, the action does not pass from the subject to any object. Therefore it is that Beltran says that all the verbs of the three last conjugations may be conjugated as if they did belong to the first. And in that case, they take, in the present of the indicative, the termination *l* preceded by a vowel, which vowel is always the same with the last vowel of the root of the verb. Thus in the verbs *nacal*, to rise, *kimil*, to die, *ocol*, to enter, the terminations are respectively, *al, il, ol*, in which the vowel is the same with that of the respective roots of the verb, *nac, kim, oc.*

Conjugation of the simple tenses of the first and second conjugations.

		1st Conjugation. Nacal, to rise.	2d Conjugation. Cambez, to teach.
	Root of the verb.	Nac.	Cambez.
Present.	Sing. 1st pers.	nac al in cah	ten cambez ic
	2d do.	nac al a cah	tech cambez ic
	2d do.	nac al u cah	lay cambez ic
	Plur. 1st do.	nac al e cah	to-on cambez ic
	2d do.	nac al a cah ex	te-ex cambez ic
	3d do.	nac al u cah ob	lo-ob cambez ic
Preterite.	Sing. 1st pers.	nac en	in cambez ah
	2d do.	nac ech	a cambez ah
	3d do.	nac i	u cambez ah
	Plur. 1st do.	nac on	ca cambez ah
	2d do.	nac ex	a cambez ah ex
	3d do.	nac ob	u cambez ah ob
Future.	Sing. 1st pers.	bin nacac en	bin in cambez
	2d do.	bin nacac ech	bin a cambez
	3d do.	bin nacac	bin u cambez
	Plur. 1st do.	bin nacac on	bin ca cambez
	2d do.	bin nacac ex	bin a cambez ex
	3d do.	bin nacac ob	bin u cambez ob
Imperat.	Sing. 2d pers.	nac en	cambez
	3d do.	nacac	u cambez
	Plur. 2d do.	nac en ex	cambez ex
	3d do.	nacac ob	u cambez ob
Infinitive.		nacal	cambez

The third conjugation differs from the second only, by the addition of the letter *e* to the root of the verb, in the simple future, and in the tenses derived from it. In the fourth conjugation, the particles *tic*, *tah* and *te*, are respectively substituted in the present, preterite, and simple future, for *ic*, *ah*, and *e*, of the third.

In all the four conjugations, and in the compound as well as in the simple tenses, there is no other variation in each

tense respectively, than that of the persons and plural signs of the pronouns; with the single exception of the third person singular of the preterite of the first conjugation (and in the plusq. perfect and compound future), in which the pronoun is omitted, and the letter *i* inserted after the root of the verb (*naci*). The second and third persons plural of the third pronoun (*in*) are *aex*, *uob*; whenever these occur in the conjugations, the signs of the plural, *ex*, *ob*, are detached from the roots of the pronoun, *a*, *u*, and placed at the end of the word: *nacalacahex*, *ucambezahob*; for it must be observed, that the apparent divisions of words, in the above table, have been made only in order that the pronouns and the particles of tenses might be distinguished from the body and inflexions of the verb.

The following table shows the first person singular of every tense, simple or compound, of the indicative and subjunctive, the 2d and 3d persons singular of the imperative, and the 3d person singular of the preterite indicative:

	1st Conj.	*2d Conj.*	*3d Conj.*	*4th Conj.*
Indicat. Present.	nacal in cah	ten cambezic	ten tzicic	ten canantic
Imperfect.	nacal in cah cuchi	ten cambezic cuchi	ten tzicic cuchi	ten canantic cuchi
1st Preterite.	nac en	in cambezah	in tzicah	in canantah
3d do.	nac i	u cambezah	u tzicah	u canantah
Plusq. Perfect.	nac en ili cuchi	in cambezah ili cuchi	in tzicah ili cuchi	in canantah ili cuchi
Future.	bin nacac en	bin in cambez	bin in tzice	bin in canante
Do. compd.	nac en ili cochom	in cambezah ili cochom	in tzicah ili cochom	in canantah ili cochom
Imper. 2d sing.	nac en	cambez	tzice	canante
3d do.	nacac	u cambez	u tzice	u canante
Subjunct. Present.	ten nacac en	ten in cambez	ten in tzice	ten in canante
Imperfect.	hi nacac en	hihuil in cambez	hihuil in tzice	hihuil in canante
Preterite.	hihuil nacac en cachi	hihuil in cambez cuchi	hihuil in tzice cuchi	hihuil in canante cuchi
Plusq. perf.	hi nacac en ili cuchi	hihuil in cambez ili cuchi	hihuil in tzice ili cuchi	hihuil in canante ili cuchi
Future.	hi nacac en ili cochom	hihuil in cambez cochom	hihuil in tzice cochom	hihuil in canante cochom
Infinitive.	nacal	cambez	tzice	canante

It will be perceived, that in all the conjugations the imperfect differs from the present only by the addition of the particle *cuchi;* that the plusq. perfect and future compound differ from the preterite only by the respective addition of the particles *ilicuchi* and *ilicochom;* and that, with a variation in the pronouns of the present, the tenses of the subjunctive are similar to the simple future, omitting the particle *bin*, prefixing the particle *hi* or *hihuil*, and adding respectively in the preterite plusq. perfect and future, the particles *cuchi*, *ilicuchi*, and *ilicochom*.

The inflexions of the verb consist, in the first conjugation, of the addition to the root of the verb, of *l* preceded by a vowel in the present, and of *c* preceded by a vowel in the simple future; whilst the preterite, with the exception of the *i* added to the third person singular, is the root of the verb itself. But the particle *cah* is added after the pronoun in the present. In the second and third conjugations, the particles *ic* and *ah*, are respectively added to the present and preterite. But the simple future of the second conjugation is the root of the verb without addition, and in the same tense of the third conjugation the particle *e* is added to the root of the verb. It has already been stated that, in the fourth conjugation, the particles of the present, preterite, and future, are respectively *tic*, *tah*, *te*. In all the conjugations, *bin* prefixed, is the characteristic of the future. In the first conjugation, the final *al* is omitted in the second person of the imperative. With that exception, the imperative of the four conjugations is similar to the simple future. The infinitive of the first conjugation is the same as the present of the indicative; that of the three other conjugations is the same as the future.

In the present of the subjunctive two pronouns are used; in the first conjugation the first pronoun (*ten*) prefixed, and the second pronoun (*en*) placed after the verb; in the three other conjugations, the first and third pronoun (*ten in*) prefixed to the verb. In all the other moods and tenses, the

pronouns are prefixed in the three last conjugations, and placed after the verb in the first. In the present and imperfect tenses, the first pronoun (*ten*) is used in the three last conjugations, and the third pronoun (*in*) in the first. In all the other tenses, the second pronoun (*en*) is used in the first conjugation, and the third pronoun (*in*) in the three others.

No reason is assigned by Beltran, or has been discovered for these variations in the use of the several pronouns. There may be a reason why, in all the conjugations, a pronoun should be used in the present and imperfect different from those of all the other tenses, and for employing different pronouns in the conjugations of the transitive and intransitive verbs. But why the third pronoun (*in, a, u,*) which is used in the present and imperfect of the conjugation of the intransitive or absolute verbs, should also be that with which all the tenses of the transitive verbs, the present and imperfect excepted, are conjugated, is not understood. It seems that Father Gabriel, author of an older grammar than that of Beltran, had assigned that third pronoun (*in, a, u,*) to the present and imperfect of the second conjugation. Of the propriety of this and some other alterations made by Beltran, I cannot judge. He says, in reference to the formation of the preterite in a certain class of verbs, that the language may have been altered since the time when Father Gabriel wrote. This may be true; and it is also possible, that some variations take place in the several provinces of Yucatan.

In the Maya, as in the Mexican, transitive assume the character of intransitive verbs, when used in the abstract, and without designating the object of the action. Whenever this takes place in the Maya language, the transitive verb is altered in several respects. In the present of the indicative it generally assumes the termination *l*, preceded by the vowel of the first syllable. Thus the transitive verb of the fourth conjugation, *ten kantic*, I eat, designating what is eaten, becomes *hanal incah*, I eat, used generally and without specifying what

is eaten; the active verb of the second conjugation *emzah*, to lower, of which the root is *emz*, becomes intransitive, by converting it into *emel*, to descend. And *xancun*, an active verb of the fourth conjugation, which means, to retard, to impede another, and the root of which is *xan*, by being converted into *xanhal*, becomes a neuter verb, meaning, "to delay." It appears, however, that this rule is not universal, and that, in some cases, the transitive verb does not adopt the termination *l* of the present of the first conjugation, when used without specifying the object; and that it is distinguished only by the substitution of the pronoun and particle of the first conjugation, viz. *incah* placed after the verb, instead of the proper pronoun and termination of the present of the three other conjugations. Thus *tentzicic*, I obey him, becomes *tzicincah*, when used generally, "I obey."

But, the rule is universal, that the formation of the preterite and future of transitive, converted into intransitive verbs, differs from that used either in the intransitive or transitive verbs, as stated in the preceding table. Although there are some variations, the general rule is that the transitive verbs converted into intransitive of the first conjugation, assume the pronouns of these, but that the termination of their preterite is *nahi* instead of *i*, and that of the future *nac* instead of *ac*. Thus when the verb *tzic* designates the person whom you obey, it makes in the preterite and future *tzicah* and *tzice*; but if used in the general or abstract sense, the preterite and future will be *tzicnahi*, and *tzicnac*, instead of *tzici*, and *tzicac*, which two last would be the regular forms of the first conjugation.

It appears, therefore, to me that there are in fact three conjugations; 1st, That of verbs intransitive proper, absolute, or neuter, which, from their nature, are not susceptible of having either an object or a passive voice, and which are those of the first conjugation, as stated in the preceding table; 2d, That of transitive verbs (embracing Beltran's three last con-

jugations), in which the object, whether a noun or the objective case of a pronoun, is expressed or implied, and which are conjugated as the verbs of the second conjugation in the preceding table, with the variations on account of their respective terminations, or of their being of one or more syllables, as above stated. 3d, That of transitive verbs used in the abstract and independent of any object, which form their tenses in the manner last above stated.

Incorporated verbs, that is to say, such as are compounded with a noun, are, as in the Mexican, and for the same reason, included in the last class, because the object is already included in the body of such incorporated verb. Thus, in the compounded verb *dshahaa*, to carry water, the preterite is *dshahaanahi*, he has carried water; and the future is *binchahaanac*.

Several exceptions subject to numerous rules are here omitted; but some instances will be given.

There are some pure intransitive verbs, the present of which does not terminate in *l:* such is *keluc* to sweat; and these have their preterite and future, terminated in *nahi* and *nac*. There are also some such verbs, the present of which is terminated in *l*, which form their preterite and future in the same manner; *okol*, I cry; pret. *oknahi*, future *binokolnac*. Verbs compounded by adding the particle *hal* or *hil* to nouns, pronouns or adverbs, signify, to make oneself; thus, from *uinic*, man, *hunppel*, one, *yaab*, much, many, are formed the verbs *uinichal*, to make himself a man; *hunppelhal*, to make himself one, to singularize himself; *yabhal*, to multiply himself. All these have also their preterite and future, in *hi* and *ac*; *uinic-hi*, he has made himself a man; *binuinicac*, he will make himself a man. Compounded verbs ending in *pahal* and in *tal*, follow the same rule.

With respect to the compound conjugations, sometimes called transitions, viz. when the verb is combined with both the nominative and the objective case of the pronoun; there

is no difficulty as regards the objective case of the first and second persons. The second pronouns *en*, *ech*, in the plural *on*, *ex*, are respectively the objective case of those two pronouns. It further appears that, in this compound conjugation, the agent or subject is expressed by the union of the first and third pronouns, *ten in*, *tech a*, and that a particle *ci*, pronounced *ki*, is prefixed to this third pronoun. Thus, in the verb *moc*, to tie, we will have for the combination of the first and second persons:

Ten kin mock ech, I tie thee.
Tech ka mock en, thou tiest me.
Ten kin lah mock ex, I tie you.
Tech ka lah mock on, thou tiest us.

These forms have been supplied by Dr. J. P. Perez: the word *lah*, which means "all," is not essential. And for the transition to the third person, he does not give *laylo*, but *ic*, for the singular of the objective case of the pronoun of that person: for its plural he gives *ob*, which, as will appear by reference to the table of pronouns, is the proper plural of the third person of that second pronoun.

Ten kin mock ic, I tie him.
Tech ka mock ic, thou tiest him.
Ten kin mock ob, I tie them.
Tech ka mock ob, thou tiest them.

This is only for the present; but in the preterite *ah*, and in the future *e*, are substituted for *ic*.

Lay (ti) ku mock ah, he has tied him.
Ten bin in mocki, I will tie him.

[Why the particle *ti* is inserted is not understood.]

Now, by referring to the table of conjugations, it will be seen that this particle *ic*, is the characteristic of the present, and *ah*, that of the preterite, in the three last conjugations, which embrace all the transitive verbs which have an object specially expressed, and that *e* is the characteristic of the fu-

ture in the two last conjugations. By these particles they are distinguished from the neuter verbs which have no object; and they lose those two particles whenever they are used as if intransitive. In all the Indian languages of which we have complete grammars, for instance the Mexican and the Algonquin, we find that objective case of the third pronoun inserted in the verb. In some shape or another, when the action refers to or has an object, a locution is used corresponding with, "I see him Peter," "I see it a stone," "I love her Maria." There is therefore a strong reason for believing, that these particles, in the three conjugations of the transitive verbs, *ic*, *ah*, *e*, signify "him," or "it," for the present, preterite, and future respectively. There is a coincidence with the Mexican in which *c*, *k*, *ki*, is used, for the same purpose, as the objective case singular of the third person of the pronoun in all the transitive verbs.

This view of the subject is rendered almost certain by Beltran's observations. Thus he says, that the particle *ic* signifies the object (persona paciente); that the neuter verb which has no object rejects it; and that the *ic* corresponds in the transitive verbs with the Spanish pronoun *lo*; *ten yacuntic*, lo amo: and that, so necessary is that particle, that without it the transitive verb cannot be conjugated according to its true signification; as in the case of *cambezic*, which does not mean, "to teach," but "to teach him." And he incidentally adverts to the same subject in several other places.

The passive voice of the second and fourth conjugation is formed by adding respectively *abal* and *tabal*, to the root of the verb, *cambezabal*, to be taught; *canantabal*, to be kept. That of the third conjugation is formed by adding to the root of the verb *l*, preceded by the same vowel as that of the root of the verb; *tzic*, to obey; *tzicic*, to be obeyed; *tal*, to touch; passive, *talal*; *mol*, to collect; passive, *molol*. If such verbs end with a vowel, *bal* must be added; *dza*, to

give; passive *dzabal.* The intransitive verbs of the first conjugation can of course have no passive: *naczabal,* or *naczal,* is not the passive of *nacal,* I risé, but of *naczah,* I raise. But it appears that all those passive verbs are conjugated as the intransitive verbs of the first conjugation.

According to Beltran, there is a substantive verb, which the conjugation for the present of the indicative will sufficiently explain. *Ten batab en,* I am a cacique.

Sing.	Ten	batab en,	I am a cacique.
	Tech	batab ech,	thou art a cacique.
	Lay	batab lo,	he is a cacique.
Plur.	Toon	batab on,	we are caciques.
	Teex	batab ex,	you are caciques.
	Loob	batab ob,	they are caciques.

It is evident that what he calls the substantive verb, is nothing more than an emphatic union of the first and second pronoun, *ten en,* I myself a cacique; *tech ech,* thou thyself a cacique, or any thing else. It is the same way of expressing attributes by an emphatic pronoun, as is found in almost every Indian language, and which in fact proves, that there is no such verb as the substantive verb in the Maya.

There are several irregular verbs, of which the most remarkable are the following:

Cen, (pronounced *ken,*) I say, is conjugated with the second pronoun, *en, ech,* &c., and its root is the single letter *c.* Its preterite and future are in the first person, *cenhi,* and *bincenac;* infinitive *cen.*

Binel, bin, to go; whence *bin,* the sign of the future, meaning, I am going to, or, I will. In the first person of the present, preterite and future, *binincah, binen, binxicen;* second person of imperative *xen.*

Incah, I make. This verb is used only in the present and imperfect, and is conjugated with the third pronoun; *incah, acah, ucah,* plural *cacah, acahex, ucahob:* which is precisely the way in which the intransitive verbs are conju-

gated; *nacal incah*, I rise, &c. It is very rarely used alone. The following instances are given; *bax acah*, what art thou doing; *mabal incah*, I am doing nothing; *lay incah*, it is done; *he bax acahe, lay incah*, that which thou art doing, let it be done.

It must be here observed that the particles *ca* and *he*, correspond with our *that*. *Ma in kat ca acambez; ma* is the negative; *in kat* is, I wish; *acambez* is, thou teach, in the subjunctive; I do not wish that (*ca*) thou shouldst teach. *Ohelte he Pedro cimi;* know that Peter is dead.

But *he*, is also a relative pronoun, as well as *lay, heklay, hemac, himac, uamac;* all which mean, who, he who; *hemaccu yacuncic Dios*, he who he loves him God. *Pedro heklay zipi ti Dios bintezcectabac*, Peter who has sinned against God shall be punished.

Beltran, adopting the system of a Latin grammar, has assigned to the verbs gerundives and supines, which are nothing more than the infinitive preceded by some particle, and participles which are perhaps only derivative. His participle present may be translated "he who does," and is formed by prefixing *ah* to the present of the indicative in the two first, and to the root of the verb in the two last conjugations. *Ahnacal, ahcambezah, ahtzic, ahcanan*, to each of which the relative pronoun must be added. The passive participle is formed in the three first conjugations, by adding *an* to the root of the verb; and in the fourth conjugation it is the root itself: *nacan, cambezan, tzican, canan;* and it means a thing which is done; *cambezan*, something which has been taught, &c.

Some cursory observations may be added.

T is generally prefixed to the preterite of the verbs of the first conjugation in order to distinguish it from the imperative: *tnacen*, I have risen.

The conversion of the termination *i* of the preterite into *ci* modifies the meaning in the following manner: *Cimi in yum*, my father died. *Cimci in yum*, since my father died.

Ten ci in, or *tenkin* prefixed may be substituted for *incah*, in the first conjugation; and if the verb begins with a vowel, the pronoun *in* may be suppressed: *ten c ualic*, I say it.

Words are perpetually syncopised by the omission of vowels. *Ten tziccech* for *ten tzicic ech*; *tzic a yum* for *tzice*; *cah* for *ca ah* (*ah* sign of male); *tin uotoch* for *ti in*, in my house; *naclin* for *nacal in*; *nac cen* for *naçac en*; *cambzic* for *cambezic*; *tla* for *tela*; *tucle* for *tucule*, and *tucla* for *tucule a*; *zazcob* for *zazacob*.

In verbs of the fourth conjugation, when the root ends in *tah*, the preterite is the same as the present, and in the future the final *tah* is changed into *te*.

There are also some verbs of that conjugation which make their preterite and future in *ah* and *e*, and not in *tah* and *te*: *bohol*, to explore; preterite and future, *bohlah*, *bohle*; such are also *ulcul*, *ziil*, *ilah*, *alah*, *cambal*; preterite and future, *canah*, *cane*.

Frequentative verbs are formed by duplicating the first syllable: *lom*, to strike, to move; *lomlomah*, to strike or to move frequently. *Lom*, having but one syllable, belongs to the third conjugation; but *lomlomah* and all the verbs which thus duplicate their first syllable belong to the fourth conjugation, and must be conjugated accordingly. Verbs of the first conjugation rarely admit that duplication; instead of which they prefix an adverb which means "frequently."

Sometimes the duplication of the syllables indicates diminution: *chocou*, hot; *chochocou*, tepid. There are also some primitive words in which the first syllable is repeated twice: *zazac*, white.

A great number of particles, prepositions, adverbs, and conjunctions is mentioned by Beltran, several of which, united to nouns or verbs, modify or alter their meaning. But the illustrations are not sufficient; and the mode of forming derivatives and compounded words is not explained.

(4) POCONCHI,

SPOKEN IN GUATIMALA.

THE only grammar of any of the languages of Central America which I could obtain, is the abridgment of the Poconchi or Pocoman, annexed by Thomas Gage to his Travels (London, 1648). He was for several years curate of two parishes which included the identical spot where the new city of Guatimala, not then in existence, now stands. This abridgment does not extend beyond twelve pages, and treats almost exclusively of the pronouns and verbs.

It appears that adjectives are altogether indeclinable, and that the plural of substantives is not distinguished from the singular: *kiro uinac*, a good man; *kiro uinac*, good men. An interjection *ah*, prefixed to the noun, is called the vocative; the genitive is supplied by the possessive pronoun *ru* (his); and other cases by particles: *chaye re Pedro rutsi*, give to Pedro his dog (*tsi*, dog). But if motion is expressed, *chi* is substituted for *re:* I go to his house Peter, *kino chi rupat Pedro* (*pat*, house). There are for the two first persons, two indeclinable pronouns, *in* and *at;* in what manner they are generally applied, is not stated. The other pronouns are, the possessive united with nouns, and those used in the conjugations of verbs. In either case different pronouns are used, according as the noun or verb united with them begins with a consonant or with a vowel. The possessive, and those used for the present of active verbs, are as follows:

	Singular.			*Plural.*		
Persons,	1st.	2d.	3d.	1st.	2d.	3d.
Possessive.						
Nouns beginning with consonant,	nu	a	ru	ca	a-ta	ki-tak
" " " vowel,	u	av	r	c	av-ta	k-tak
Used in conjugating.						
Verbs beginning with consonant,	nu	na	inru	inca	na-ta	inki-tak
" " " vowel,	inv	nav	inr	ink	nav-ta	ink-tak

Tat, father. *Nutat, atat, rutat*, my, thy, his father. Pl. *Catat, atat-ta, kitat-tak.* And if the noun begins with a vowel, such as *acun*, son, it will be *uacun, auacun, racun*; pl. *cacun, auacun-ta, kacun-tack.*

The signs of the plural of the second and third persons are, in every instance, *ta* and *tak*, added to the singular; but, as in the other Indian languages, detached from it and placed after the noun.

There are but three tenses in the indicative: present, preterite, and future. The ordinary future and the present are the same; but there is a verb meaning, ***I will***, the root of which is simply *a*, and which, conjugated with its proper pronoun *inu, nau*, &c., is prefixed to the present, in order to express more strongly the future tense. The preterite and the imperative are not otherwise distinguished from the present than by the substitution of other pronouns; and these are given, in Gage's grammar, only for the verbs which begin with a consonant. Other pronouns again, which may be considered as the objective case, are used in the conjugation of the passive voice, of neuter verbs and of the transitions; and these vary also in the present and preterite of the indicative and in the imperative. But there is this difference, that, in the conjugation of neuter verbs and in the transitions, the body of the verb remains the same, and that this is altered by an inflexion in the passive voice, which inflexion varies, according to the termination of the verb. The following table exhibits those variations for the verb ***locoh***, to love, which begins with a consonant, and the passive voice of which is ***loconhi.***

Present.		*Active.*		*Passive.*		*Neuter.*
Singular.	1	nu locoh		kin loconhi		kin ki—*I say.*
	2	na locoh		ti loconhi		ti ki
	3	inru locoh		in loconhi		in ki
Plural.	1	inka locoh		co loconhi		co ki
	2	na locoh	ta	ti loconhi	ta	ti ki ta
	3	inki locoh	tak	ki loconhi	tak	ki ki tak
Preterite.						
Singular.	1	ix locoh		xin loconhi		
	2	xa locoh		ixti loconhi		
	3	ixru locoh		ix loconhi		
Plural.	1	ixca locoh		xo loconhi		
	2	xa locoh	ta	ixti loconhi	ta	
	3	ixk locoh	tak	xi loconhi	tak	
Imperative.						
Singular.	2	cha locoh		ti loconho		
	3	chiva locoh		chi loconho		
Plural.	1	chica locoh		chica loconho		
	2	cha locoh	ta	ti loconho	ta	
	3	chiki locoh	tak	chiki loconho	tak	

Gage observes that *x* is sounded like the English *sh*, and *v* or *u* as the English *w*.

The proof that neuter are conjugated like passive verbs, is found in his conjugation of the indicative of the neuter verb *ki*, to say. And that these passive pronouns are the objective case and are used with the active form of the verb (*locoh*,) appears from the examples of transitions which he has given.

I love thee,	Ti nulocoh
I have loved thee,	Ix tinulocoh
I will love thee,	Tiranulocoh
Thou lovest me,	Ki nalocoh
Thou hast loved me,	Xi nalacoh
Thou wilt love me,	Kinralocoh
Love me,	Kinalocoh ta

But Gage has not given examples of the transition *to* the third person. *Nulocoh* means, "I love:" He does not inform us how, "I love him," is expressed.

The variations in the formation of the passive voice, are these. Verbs ending in *a*, change it into *hi*; *nurapa*, I beat;

passive *kinrap-hi*. Those ending in *oh*, change it into *onhi*; *nulocoh*, *kinloconhi*. Those that end in *eh*, change it into *hi*; *invivireh*, I hear; passive *kinivir-hi*. Those ending in *sa*, change the *a* into *ihi*; *invesa*, I deliver; passive *invesihi*. Those that end in *ach*, add *hi* in the passive; *nusach*, I forgive; passive, *kinsach-hi*. The final *hi* would thus seem to be always the sign of the passive voice, with the single exception of the imperative where the final *i* is converted into *o*. But it will be seen in the notes to our Lord's prayer, that that voice may have other terminations.

The optative mood is the same with the indicative, adding the particle *ta*, which signifies, *may it be*; or prefixing *vey*, which means, *if*. The infinitive is the same as the indicative without pronoun.

With respect to verbs beginning with a vowel, Gage gives only the present of the indicative of the active voice. *Ivireh*, to hear:

Sing.	Invivireh,	I hear	Plur.	Ink ivireh,	we hear
	Nav ivireh,	thou hearest		Nav ivireh ta,	you hear
	Inr ivireh,	he hears		Ink ivireh tak,	they hear

It seems that some prepositions may be combined with nouns united with their proper pronoun. The example given is that of the preposition *chi*, and of the noun *ih*, which signifies back; this combination means, against; and as the word *ih* begins with a vowel, it is declined as follows:

Sing.	Chivih,	against me	Plur.	Chikih,	against us
	Chavih,	against thee		Chavihta,	against you
	Chirih,	against him		Chikih, chikihak,	against them

Gage says that there is a substantive verb, *vilk*, which is conjugated as follows: singular *vilkin*, *vilkat*, *villi*; plural, *vilkoh*, *vilkata*, *vilktak*. This is the only instance given of the first-mentioned pronouns *in*, *at*, I and thou. This is done in reference to the Lord's prayer: *catat*, our Father, *taxah*, Heaven, *vilcat*; and this last word Gage translates, "thou art."

Neuter verbs and transitive verbs taken in the abstract, and without specifying the object, are formed from nouns by adding *ivi* and *ini*. From *mac*, *laval*, both which mean "sin," are formed the verbs *kin makivi*, and *kin lavini*, I sin; the final *al* of the noun being dropped in the last example.

Nouns are formed from adjectives by adding the terminations *hal*, *kil*, equivalent to the English *ness*. *Kiro*, good, *tsiri*, bad; *kirohal*, goodness, *tsirikil*, evil, wickedness.

No mention is made of a comparative; but *lah* added at the end of an adjective in some degree supplies the superlative: *kirolah*, very good, *tsirilah*, very bad.

Prepositions are often omitted, as in the above-mentioned sentence, *catat taxah vilcat*, "Our Father Heaven thou art, or dwellest." And the plural sign of the third person, *tak*, is also occasionally omitted. No allusion is made either to dual or special plural.

Our Lord's Prayer, as given and translated by Gage:

Our Father heaven art thou
Catat taxah vilcat

Great may it extolled be thy name
Nimta incaharcihi avi

It come may thy kingdom upon our heads
Inchalita avihauri pan cana

It be done may thou wilt here face earth as it is done heaven
Invanivita nava yaviroach acal he invan taxah

Give thou to day our every may daily bread
Chaye runa cahuhun ta quih vi-ic

Thou forgive may our sins as we forgive their sins they have sinned against our backs
Nasachta camac he incasachve kimac ximackivi chikih

Not us thou let into our being tempted be
Macoacana chipam catakchihi

Us thou deliver may from all evil things not good even as he says
Coavesata china unche tsiri mani quiro he inqui

[*qui* pronounced *ki*.]

The sign of the optative *ta* may be placed before the verb when preceded by an adjective: *nimta*, great may.

Incaharciki, third person of *kincaharciki*, I am magnified; *nucaharca*, I magnify. *Inchalita*, third person optative of *kinchali*, I come.

Pancana, from *pan*, in or upon, and *na*, head; idiomatic, "upon our heads," for "upon us." *Chikih*, against our backs, for, "against us," has already been mentioned. *Invan*, *invanivi*, seem both to mean, it is done. The active verb is *nuvan*, I do or make, from which the passive, which, as appears by this instance, may be *kinvan*, or *kinvanivi*, as well as *kinvanhi*.

Nava, thou wilt, substituted for, "thy will." Gage says that there is no equivalent for the abstract noun, "the will."

Chaye second person singular imperative of *naye*, I give, *ye*, to give.

Our bread
Cahuhun ta quih uiic. The *ca* refers to the last word of the sentence *viic*, bread, *cauiic*, our bread. *Quih* or *kih* means, "sun," and "day;" here it is used as an adjective. *Ta*, may, is placed far distant from *chaye*, give thou.

Incasachve, first person plural of *luçach*, I forgive, with the addition of the ornamental particle *ve*. *Kimac*, their sins; the final *tak* is omitted.

Ximakivi, third person plural of the preterite of *kinmakivi*, I sin.

Macoacana, let us not. *Ma* is the negative abbreviated from *mani*. *Cana* is the root of the verb, and as it begins with a consonant, the second person (thou) should have been *na*, or if in the imperative, *cha*. *Co* is the objective case of the pronoun in the first person plural. It seems, therefore, that the word should have been *maconacana*. Gage says that *co* causes the *n* to be cut off. The same observation applies to *coavesata*, may thou deliver us. The root of the verb is *uesa*, to deliver, and begins with a vowel; therefore, *invuesa* (by syncop. *invesa*), I deliver; *navuesa*, thou deliverest, by syncop. *navesa*, in the optative *navesata*, and the word according to the general rule should have been *conavesata*.

Catakchihi. There is no abstract substantive, meaning, temptation. The active verb is *nutakchih;* passive, *kintakchihi,* I am tempted; *cotakchihi,* we are tempted; but the word used here is *catakchihi,* and it is thus formed. From the passive *kintakchihi,* is derived, omitting the passive pronoun, the adjective or participle passive *takchihi,* tempted, or being tempted, which is declined as a noun, *catakchihi,* our being tempted.

These notes on Our Lord's Prayer are extracted from Gage, with some observations by me.

The Quiché language was spoken in the ancient kingdom of that name, which lay north-west of the city of Guatimala, and appears to have extended as far as Soconosco. The only specimen we have of that language (besides the numerals, which are the same as in the Maya), is a copy of Our Lord's Prayer, given, as well as the numerals, to Mr. Stephens, by the curate of Quiché. There are some evident errors in that transcript. I give it, however, verbatim; having only corrected the punctuation, and inserted between crochets three words which have clearly been erroneously transcribed twice. I have added a literal translation, so far as was intelligible to me. There is an evident affinity between this language and the Poconchi, as well as between both and the Maya.

Our Lord's Prayer (Quiché).

Our Father heaven
1. Cacahan chicah lac coni vtza
it extolled be thy name
2. Ucahaxtizaxie mayih bil a chipa
may on our heads thy kingdom fall
3. Ta pa cani a hauremla chibantah
thy will it made be earth as in
4. A huamla uaxale (chiyala chiqueeh hauta) vleus quehexi caban
heaven
chicah

bread our thou give daily to day
5. Uacamic chiyala chiqueeh hauta eihil caua
forgive our sins as we forgive their sins who have sinned
6. Zachala camac quehexi cacazachbep quimac xemocum
against our backs
chiqueeh
being tempted not also us let in fall
7. Moho estachcula maxa copahic chupamtah
from sin us deliver
8. Chibal mac xanare cohcolta la ha vonohel itgel quehe chucoe.
Amen.

The words, *lac coni utza*, 1st line; *mayi bil*, 2d line; *eihil caua*, 5th line, seem superfluous.

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(5) HUASTECA,

SPOKEN IN THE PROVINCE OF THAT NAME ON AND NEAR RIO PANUCO, INCLUDING TAMPICO.

THE author of the only grammar and vocabulary which has been obtained, is Father Tapia Zenteno, the same who wrote the Mexican grammar before mentioned. His analysis of the pronouns and verbs is imperfect and obscure.

Nouns.

There is an occasional distinction between animated beings and inanimate things. The sex is no otherwise distinguished than by prefixing a word which means, man or woman.

Nouns have no other case but the vocative, expressed as in the Mexican, by adding the letter *e* to the nominative: *ajatic*, *ajatice*. In some words *lom* is put before the *e*: *tzale*, the governor, in the vocative is *tzalelome*.

The plural is generally formed by adding to the singular, the particle *chic*: *uatic*, my son, *uaticchic*, my sons.

The words *cuytol*, a boy, and *tzicach*, a girl, may form their plural, when speaking of children, as follows, *chichicuytol, tzitzicach.*

It is also very usual to express a great number, by prefixing the adjective *yam* which signifies many or much: *yam inic*, many men; *yam ybichim*, many animals; *yam te*, many trees.

The particle *il* suffixed makes a diminutive, but only in the first and second persons: my child, *utzacan;* my little child, *utzacanil;* my house, *ukima;* my small house, *ukimail.* When speaking of things, the diminutive is generally formed by the adjective *chichic;* a stick of wood, *te;* a small stick, *chichicte;* a table, *octza;* a small table, *chichicoctza.* But *chichic* is never applied to men or women, in lieu of which *tzacam* prefixed is used.

Abstract nouns are formed by adding to the adjective the particle *talab* or *tal: cacnax*, civil, *cacnaxtalab* or *cacnaxtab*, civility; *tzehuantal*, poor, *tzehuantaltal*, poverty. Man (*homo*) *inic*, what belongs to man, *inictal* (humanidad).

The particle *tam* prefixed indicates place, district, people: *tamtocob*, is the place of clouds; *tamzabtocoy*, is the place of white willows.

There is no superlative proper; but the particle *le* prefixed means, very: *pullic*, great; *lepullic*, very great.

For comparative they use the adverb *ocox*, more:

good	man	John,	more	good	man	Peter.
alhua	inic	a Juan,	le ocox	alhua	inic	Pedro.

The word *cahuyl* is sometimes used instead of *ocox.*

There is not in this language a reverential termination as in the Mexican. But in conversation, speaking to their superiors, they often repeat the word *atke*, sir or lord.

Pronouns.

The primitive pronouns are in the singular for the three persons respectively, *nana, tata, jaja;* which are syncopised

in composition, viz.: *na, ta, ja.* It does not appear that they are ever united with nouns: and when used in conjugations, they may be placed either before or after the verb. The plural is for the three persons, *huahua*, we; *xaxa*, ye; *baba*, or *jaja*, they.

But the ordinary pronouns, and which are equally used as possessive and in conjugating verbs, are, in the singular, first person, *u*; second, *a*, or *ana*; third, *in*. Wife is *yxal*; my wife *uyxal*; thy wife *ayxal*, or, *anayxal*; his wife *inyxal*. *Tahjal* is, to make; *utahjal* I make; second person *atahjal*, or, *anatahjal*; third person *intahjal*.

And there is another pronoun used only in conjugation, viz.: for the three persons of the singular, *in, it, in*; which last *in* of the third person may be omitted. It appears that all these pronouns have the same plural as the primitive, viz.: *huahua*; *xaxa*; *baba*, or, *jaja*.

		1st Pers.	2d Pers.	3d Pers.
Singular	Primitive	nana	tata	jaja
	Syncopised in composition	na	ta	ja
	Possessive and used in Conjugations	u	a, ana	in
	Used in Conjugations	in	it	in
Plural		huahua	xaxa	baja, jaja

Other pronouns are used in order to designate the future tense and the passive voice, which will be hereafter adverted to.

The absolute possessive pronouns (mine, thine, &c.,) are formed by uniting the primitive and possessive pronouns, and adding the particle *cal*; *nanaucal*, mine; *tataacal*, thine, &c.

The interrogative pronouns (who and what) are *itam*, for animated beings, or rather rational persons, and *atam* for inanimate things; prefixing the particle *tami* to the pronouns of the two first persons, and *exe*, or *naxe*, to that of the third person. *Itam tamitata*, who art thou; *itam exejaja*, or, *itamexe*, who is he; *atamexe*, what is it.

There is not in this language any relative pronoun, such as our *who*, without interrogation, or, "he who." And Father Tapia Zenteno expressly asserts that there is no substantive verb answering to the Latin *sum, es, fui*; and that it is therefore impossible to express in Huasteca the sentences, "ego sum qui sum," or, "qui est missit me." He adds that this is supplied in the preterite, by giving its termination *itz* to the pronoun. The want of illustrations renders his meaning doubtful. In no Indian language is that verb used, to my knowledge, in reference to attributes. Thus, Peter is a good man, *alhua inic Pedro*, literally, good man Peter; I am good, is expressed by *nana alhua*, I good. But, if it be intended to say, I have been good, the pronoun is conjugated in reference to tense, by adding to it the characteristic of the preterite *itz*; *nanaitz alhua*, I have been good.

The pronoun, *xita*, some one, (aliquis) may be noticed, because it applies exclusively to animated beings; and *xata* is used in reference to inanimate things. Prefixing the negative *ibatz*: no one, no body, *ibatz xita*; nothing, *ibatz xata*.

Verbs.

According to Father Tapia Zenteno, there are two conjugations, which in their external form differ only in the formation of the preterite. The first has its preterite in *its*, or *titz*, or *al*, or *nal*; and the second in *nec*, or *nenec*. Verbs of the second conjugation may have their preterite in *itz*; but those of the first never have it in *nec*. A few verbs have both the preterite in *itz* and *nec*. In both conjugations, two pronouns are used, the primitive *nana, tata, jaja*, and either *u, a, in*, or *in, it, im*. Strictly speaking there is no passive voice, inasmuch as that which is thus called is in reality the conversion of our passive into an active form. Yet, conforming himself to the usage of grammarians, he has designated this conversion by the name of passive, of which there are two forms. But this

applies only to the first conjugation, as the verbs of the second cannot from their nature have a passive voice. And, in the sequel, he expressly states, that the verbs of the first conjugation are transitive, and those of the second intransitive. It appears therefore that his second corresponds with the first Maya conjugation; and his first with the second conjugation of the Maya. There is however some confusion in his arrangement; and he admits that a perspicuous explanation of that subject is extremely difficult. There is some distinction, in the verbs of his second conjugation, between those which make their preterite in *nec*, and those that have it in *nenec;* and it is remarkable that all those which have it in *nec*, have the termination of the present of the indicative the same as that of the first Maya conjugation, viz.: in *l*, preceded by a vowel; but whatever that vowel may be, the termination of the preterite is always *enec*. Those which make their preterite in *nenec* have different terminations in the present of the indicative; and there is some variety in their mode of forming the future.

The indicative has five tenses; the subjunctive, only the present and imperfect. Other pronouns are substituted in the future, imperative and subjunctive, for *u*, *a*, *in;* viz., in the future *ku* or *kia* in the first, and *kia* in the second and third persons; in the imperative *ka;* in the subjunctive *ku* and *ka* or *kia*.

The characteristic inflexions are, in the indicative, for the present *l;* for the imperfect *litz;* for the preterite *itz;* or *mal;* in the plusq. perfect *lac* or *malac*. This last inflexion is also that of the imperfect of the subjunctive. The root of the verb without any inflexion is found in the future, the imperative, and the present of the subjunctive. The infinitive or its equivalent, is formed by adding *b* to the root of the verb, and prefixing the particle *tin*. The only difference, between the first and the second conjugation, consists in the substitution, in the preterite, of the inflexion *nec* or *nenec*, for *itz* or *mal*. All these particulars

are explained by the following abridged paradigm of the active verb *tahjal* I make, of which the root is *tahjv.*

				2D CONJUGATION. *Ozal*, I enter.
Indic. Pres. Sing.	1st pers.	nana u (or, in)	tahja l	nana u (or, in) oz'al
	2d "	tata a (or, it)	tahja l	
	3d "	jaja in (or, omit'd)	tahja l	Similar to first in
Plur.	1st "	huahua ya	tahja l	every respect but
	2d "	xaxa ya	tahja l	the preterite.
	3d "	baba	tahja l	
Impf. Sing.	1st pers.	nana u (or, in)	tahja litz	
Pret. "	" "	nana u	tahja itz	nana u oz enec
Plusq. pf. "	" "	nana u	tahja lac	
Fut. "	" "	nana kia	tahja	
Imperat. "	2d pers.	tata ka	tahja	
Subj. Pres. "	1st "	nana kia	tahja	
Impf. "	" "	nana u (or, in)	tahja lac	
Infin.			tin tahja b	

The author adds that most of the verbs of the second conjugation are in their nature intransitive; and that, although some of them are in their ordinary signification active, they in that case become intransitive, so that the action has no specific object. He is rather obscure in that respect; and it is only a conjecture on my part, that those verbs of his second conjugation, which may have their preterite in *itz*, correspond with the transitive verbs of the Maya, which, when in the abstract and without referring to any object, make their preterite in *nahi.*

The passive voices, so called, are, as above stated, conversions of our passive into an active form. The first of these is the substitution of the form, he or they make, love, &c., me, thee, him, us, you, them; instead of, I am made or loved, thou art, he is, we are, ye are, they are, made, loved, &c. This form is accordingly, in the Grammar, translated into the Spanish *me hace, te hace,* &c. But the second passive voice is translated, *aquel me lo hace, aquel te lo hace,* he makes or does it to me. This is a distinction which applies only to verbs which have two objects, such as, to give, which implies a thing given and a person to whom given; but in such verbs

as, I love, there is but one object, viz., the person loved. His distinction is therefore obscure; and I suspect that his first passive voice is but a variety, in the two first persons of the second. It is certain that they are both conjugated without the primitive pronouns *nana*, *tata*, and by a combination of the pronouns *u*, *a*, *in*, with the objective or accusative case of the same pronoun; and that what he calls the second passive voice is that compound conjugation known by the name of transitive, with this addition, that the particle *chi* is substituted for the last syllable of the root of the verb, and may be considered as a characteristic of the passive. This intercalation of the particle *chi* does not take place in the two first persons of the first passive voice; and it may be that all the transitive verbs may, in that compound conjugation, be conjugated with or without the insertion of that particle; and that this constitutes the difference between what the author calls the two passive voices.

If there be some obscurity respecting that particle, or passive inflexion of the verb, there is none whatever respecting the combination of the pronouns used in both varieties. They are in the nominative and objective cases respectively:

	Sing.	*Plur.*
Nom.	I, *u*; thou, *a*; he, *in*, *i*;	we, *huahua*; ye, *xaxa*; they, *in*.
Obj.	me, *tah*; thee, *tat*; him (omitted);	us, *ya*; you, *taxi*; them, *hua*, *a*.

And their combinations are, viz.:

Sing.	*Plur.*
I thee, *tatu*; I him, *u*;	we you, *huahua taxi*; we them, *hua hua hua*.
thou me, *tana*; thou him, *a*;	ye us, *xaxa ya*; ye them, *xaxa a*.
he me, *tanin*; he thee, *tati*; he him, *in*;	they us, *ta ya*; they you, *taxi*; they them, *hua a*.

Some irregularities may be found in the third person. It will be seen that the pronoun in the nominative case is, in the singular, placed after, and in the plural, before the pronoun

in the objective case. This distinction between the nominative and objective case of the pronoun, and the preceding Table, are my own; but it will be seen that they are deduced from the examples and illustrations given by the author of the grammar, which I annex, with his own Spanish translation of the meaning. They are given by him at large only for the present of the indicative.

First Passive Voice.

Me hace (id est, soy hecho),	tanin tahjal.
Te hace, ...	tati tahjal.
Te hace, ...	in tahchial.
Nos hace, . . .	tahua tahjal.
Os hace, ...	taxi tahjal.
Les hace, . . .	in tahchial.

Second Passive Voice.

Yo te lo hago, . . .	tatu tahchial.
Yo se lo hago, . . .	u tahchial.
Tu me lo haces, . .	tana tahchial.
Tu se lo haces, . .	a tahchial.
Aquel me lo hace, . .	tanin tahchial.
Aquel te lo hace, . .	tati tahchial.
Nosotros os lo hacemos, .	huahua taxi tahchial.
Nosotros se lo hacemos, .	huahua hua tahchial.
Vosotros nos lo haceis, .	xaxa ya tahchial.
Vosotros se lo haceis, .	xaxa a tahchial.
Aquellos nos lo hacen, .	*ta hua tahchial.
Aquellos os lo hacen, .	taxi tahchial.

* Anomaly.

The other tenses are, with few variations, formed by adding the same terminations by which they are distinguished in the active voice. In the future, the final *al* is suppressed as in the active form: I will do it to him, *kintahchi* or *kiatahchi*. This tense is also sometimes formed without the particle *chi* by adding *n* to the root of the verb: they will make me, *kintahjan*; but this seems to belong to the form called the first passive. It is necessary in the plural of the imperative to preserve the primitive pronouns. In the preterite the particle *chinchi* is substituted for *chi*: I have done it to him, *utahchin-*

chitz, instead of *utahchitz*. But this duplication of *chi* with the intercalation of *n* is also used in order to make frequentative verbs: I do it to him repeatedly, *utahchinchial*.

To these forms must be added that of the reflective verb, to which is always added a particle *tuba*, *taba*, &c., always ending in *ba*.

Reflective Verb, u tah chial tuba, *I make myself.*

		Sing.
1st pers.		u tah chial tuba
2d	"	a tah chial taba
3d	"	in tah chial tinba.
		Plur.
1st	"	hua tah chial tuaba
2d	"	xaxa tah chial tiaba
3d	"	in tah chial tinba

Verbs which may become compulsive (causative form) do, when polysyllabical, substitute the letter *n* for the final of the root of the verb, if this be a consonant, and suffix the particle *za*: to eat, *capul*; to drink, *utzal*; to walk, *tehon*; to make another eat, drink, walk, *capunza*, *utzanza*, *tohonza*. But there are exceptions: to die, *tzemel*; to make another die, to kill him, *tzemza*.

There are defective verbs. *Tal* to come, has only two persons, *intal* I come, *huextal* he comes. The verb *enel*, to go, is very irregular. Present singular, I go, *innel*, *netz*, or *netzitz*; thou goest, *itnetz* or *netzitz*; he goes, *netz* or *netzitz*. The plural is conjugated as other verbs; but the primitive pronouns must be used. Imperfect and plusq. perfect of indicative and snbjunctive, *netzac* or *natzac*. Future imperative and present subjunctive, first person *kinatz*, second person *takitnatz*.

Some verbs make their preterite in *mamaz*; *utzal* to drink, Pret. *utzal mamaz*; *jaylal* to fast, *injalamamaz* I have fasted. *Bixom* to dance, loses its last syllable, I have danced *imbixmamaz*.

It must be admitted that the Indians, particularly the peasants, use that particle *itz* (which is the appropriate sign of the preterite,) without distinction for all the tenses.

There are verbs derived from nouns or adverbs which have their termination in *beza* or *meza : atax* dirty, *ataxbeza* to stain ; *icat* speedily, *icatbeza* to order another to make haste.

There is no participle; but many nouns ending in *x*, are derived from verbs. *Exophchial* to teach, *exopchix* teacher, *louh* to save, *lohox* Saviour; *ketza* to limp, *ketzax* lame ; *tzoblal* to know, *tzobnax* a wise man ; *cacnax* one educated, from the verb *cacnal.* Others add to the verb the particle *chic* (sign of the plural) ; *talchic* those who come, from the verb *tal* to come.

Particles.

The most common Particles in composition are *tin* or *tan, al* or *tinal, cal* or *tincal, timba, ti,* always prefixed.

Tin or *tan* indicates movement, and is placed between two verbs, of which the last indicates the action to be made ; *netz tintahjal,* I am going to do ; *netz tancapul,* I am going to eat. This form corresponds with the first gerundive of the Mexican.

Al or *tinal* means within, inside ; heart *ychich,* within thy heart *tinal aychich* ; house *ta,* inside of thy house *alata.*

Cal or *tincal* signifies by or with ; *tincal yahualab, ultitz an tzemlab,* by sin came death ; *cal u Dios* with my God.

Timba, means, "from ;" (Latin *ab, ex, de*). *Ti,* means in ; in the church nobody laughs : *ti teopam ibxita huatehnal.*

The particle *ki* means nothing by itself ; united with the noun, it indicates indifference or no importance ; I come for no reason *intalki ;* if you ask, what are you doing here ? they will answer *inkahtki,* I am here in order to be here.

Certain adverbs *ki, ni, tieb, tineb, ezay,* change the nature

of the sentence, and designate the meaning of the noun or verb to which they are joined. (This is very obscure and no illustrations are given.)

The particle *tam*, in composition, means sometimes *when*, and sometimes *in*. But it supplies sometimes the substantive verb: I desire to go to be a Christian, *ullelcinatz tam Christiano*. The particle *il* added to the numerals, *kuuil*, *tzabil*, &c., means, once, twice, &c.

The conjunction *ani*, means, and. The sentence, *max ani*, *max ibani*, means, be it so or not. *Max* is there disjunctive, but standing alone it means, "if." *Oni* and *nanakis* are particles of affirmation. *Ib* and *ibatz* are negative particles.

No allusion is made in this grammar, either to a dual, or to a special, inclusive, or exclusive plural.

The author says that the women speak with prodigious volubility, and moreover, that they abridge or syncopise almost every word, so as to make their language very difficult to be understood. Here, as amongst all the other Indian nations, the names by which they express the various degrees of kindred differ from those used by men.

(6.) OTOMI LANGUAGE.

Extracted from the dictionary and grammar of the Licentiate Louis de Neve y Molina. Mexico, 1767; and from Emanuel Naxera's Dissertation. Philadelphia, 1835.

Molina's Grammar.

The consonants, f, j, l, and the hissing sound of s, do not occur in this language, and r, rarely if ever. The *ph* is never sounded as *f*, it must be sounded *p*, and the *h* only designates the aspiration of the ensuing vowel. The letter *k* (or *q* or *c*) and the letter *t* are often duplicated (*kk*, *qq*, *cc*, *tt*,) and express the double sound of such letter. The vowel *o* has the

same sound as in Spanish. The other vowels *a*, *e*, *i*, *u*, have besides the ordinary Spanish sound, the nasal French sound; and the *e* and *u* have in addition a guttural sound. The want of characters to express these varieties may lead to etymological errors, but does not essentially affect the grammar.

The nouns are altogether indeclinable. The plural is generally distinguished from the singular by the prefixed article, *na* in the singular, *ya* in the plural; both being our article *the*. *Ye* means hand; *na ye*, the hand; *ya ye*, the hands. The plural is also sometimes expressed by substituting the particle *e* for *ya*.

The comparative and superlative are expressed by particles prefixed: *mannra*, more; *chy*, less; *tza*, *tze*, very.

Dimunitives are formed by prefixing the particle *ztzi* to the noun.

Verbal nouns are formed by prefixing to the verb letters which vary according to its first letter. When the verb begins with a vowel, the particle to be prefixed is *tt* or *y*: from *opho*, to write, are derived *na ttop-ho*, manuscript, and *na yopho*, the writer. If beginning with *h*: *t* must be prefixed; *honi*, to search, *na thoni*, the act of searching, diligence. If beginning with *ma*, *h* must be prefixed: *madi*, to love, *na hmadi*, the love. But another derivative may be formed from the same verb: *na mamahte*, the lover. When the verb begins with *m* followed by a vowel other than *a*, no particle is prefixed, and the noun is the same word as the verb: thus, *muntzi* means, equally, to unite, and, union. The *h* is likewise prefixed to all the verbs which begin with *n*: *nee*, to wish, *na hnee*, the will; *nu*, to see, *na hnu*, the sight.

If the verbs begin with *x*, the noun is formed by changing *x* into *z*: *xopho*, to reap, *na zopho*, the crop. If the verbs begin with *p*, there is no constant rule for forming the derivative: *phydi*, to begin, *na mydi*, the beginning; *padi*, to know, *na nphadi*, the knowledge, and *na nbadi*, the wise man; *pephi*, to work, *na bephi*, the work. Many other verbs beginning either with *p*, or other letters than those above men-

tioned, are also nouns, without any alteration or prefixed particle; in which case the nouns are distinguished from the verbs by the articles *na* and *ya*.

The nouns which designate the subject of the action are generally formed by adding to the verb the particles *te* or *bate*, but without prefixing any particle: *qhuanni*, to confess, *na qhuambate*, the confessor; *pehpi*, to serve, *na pehpate*, the servant; *ndehqui*, to divine, *na ndehquite*, the diviner; *phatzi*, to aid, *na phaxte*, the helper; *tede*, to create, *na tetbate*, the Creator.

Pronouns.

The primitive absolute pronouns are:

Sing.	1st pers. I	Nuga, nugaga, nugui
	2d do. thou	Nugue, nu-y
	3d do. he, it	Nunu
Plur.	1st do. we	Nugahe, nugagahe, nuguihe
	2d do. ye	Nuguegui, nuguehu, nu-y-hu, nu-ygui
	3d do. they	Nuyu

It will be perceived that the plural is formed by adding for the first person *he*, for the second *gui*, or *hu*, and for the third person *yu*. The pronoun *nuna*, this, in the plural is also *nuyu*. The particle *ce* added means, self; *nugace*, I myself.

The possessive pronouns are:

	1st.	2d.	3d.
Sing.	ma	ni	na (or, ni)
Plur.	mahe	nigui	nayu

		Sing. Pronoun.		*Plur. Pronoun.*	
1st pers.	noun singular.	my house	ma ngu	our house	ma ngu he
2d do.		thy "	ni ngu	your "	ni ngu gui
3d do.		his "	na ngu	their "	na ngu yu
1st do.	noun plur.	my houses	ya mangu ga	our houses	ya mangu he
2d do.		thy "	ya mingu hu	your "	ya ningu gui
3d do.		his "	ya nangu nu	their "	ya nangu ya

The pronouns used in the conjugations of verbs are very different; and not only the persons and number, but the sim-

ple tenses also are distinguished by variations of the pronoun *alone*, whilst the root of the verb remains altogether inflexible. In this particular, the Otomi differs from all the other American languages known to me. In the plural, the verb is placed between the pronoun and the plural termination of such pronoun. The compound tenses are distinguished only by the particle *hma* placed immediately after the root of the verb, and in that case the sign of the plural is placed after that particle.

The author of this Grammar says, that there is a substantive verb, *go*, rarely used, and which is conjugated with the primitive pronouns. No illustration is given explanatory of its true meaning, and it does not appear how it is applied. It is certain that it is not used for the purpose of forming the passive voice, which does not exist in this language; nor in reference to attributes, as will appear by the annexed conjugations of both the ordinary verb, and the form of, *I rich*, for *I am rich*.

		Di nee, I wish, desire.		Dna memti, I rich (for, I am rich.)	
	prs.	Singular.	Plural.	Singular.	Plural.
Pres.	1st	di nee	di nee he	dna memti	dna memti he
	2d	gui nee	gui nee gui / hu	gna memti	gna memti gui / hu
	3d	y nee	y nee yu	na memti	ya memti
Imprf.	1st	di nee hma	di nee hma he	dna memti maha	dna memti mahe
	2d	gui nee hma	gui nee hma gui / hu	gua memti maha	gua memti magui / hu
	3d	y nee hma	y nee hma yu	na memti maha	ya memti maha
Pretr	1st	da nee	da nee he	da memti	da memti he
	2d	ga nee	ga nee gui / hu	ga memti	ga memti gui / hu
	3d	bi nee	bi nee yu	bi memti	bi memti
Comp.	1st	xta nee	xta nee he	xta memti	xta memti he
pret.	2d	xca nee	xca nee gui / hu	xca memti	xca memti gui / hu
	3d	xa nee / xpi nee	xa nee yu / xpi nee yu	xa memti / xpi memti	xa memti / xpi memti
Plusq.	1st	xta nee hma	xta nee hma he	xta memti maha	xta memti mahe
perf.	2d	xca nee hma	xca nee hma gui / hu	xca memti maha	xca memti magui / hu
	3d	xa nee hma / xpi nee hma	xa nee hma yu / xpi nee hma yu	xa memti maha / xpi memti maha	xa memti maha / xpi memti maha
Fut.	1st	ga nee	ga nee he	ga memti	ga memti he
	2d	gui nee	gui nee gui / hu	gui memti	gui memti gui / hu
	3d	da nee	da nee yu	da memti	da memti
Comp.	1st	guaxta nee	guaxta nee he	guaxta memti	guaxta memti he
fut.	2d	guaxca nee	guaxca nee gui / hu	guaxca memti	guaxca memti gui / hu
	3d	guaxa nee / guaxpi nee	guaxa nee yu / guaxpi nee yu	guaxa memti / guaxpi memti	guaxa memti
Impe- rative	2d	nee	nee gui / hu	memti gue	memti gui / hu

The pronouns with which the adjective *mentí* is connected or conjugated are in all the tenses, other than the present and imperfect, precisely the same as those used in the conjugation of the verb *see*. The pronouns, in those two tenses, are abbreviations *d* and *g* of *di* and *gui*, with the addition of the particle *na*.

No mention is made of irregular verbs; and it seems that all verbs are conjugated in the same manner, with the single exception of some variations in the third person singular and plural of the preterite; in which case, the same variation is made in the third persons singular and plural of the plusq. perfect and of both the futures. These variations are regulated by the letter with which the third person of the verb begins.

If it begins with a vowel other than *i*, *y* is prefixed to the root of the verb: *adi* to ask, preterite *bi yadi*, instead of *bi adi*.

If beginning with *c*, this is changed into *g*: *cotti* to shut, pret. *bi gotti*.

If beginning with *p*, this will be converted into *m* or *b*: *petzi* to keep, pret. *bi metzi*; *padi* to know, pret. *bi badi*.

If beginning with *q* followed by *h*, the *q* will be converted into *g*: *qhuti* to pay, pret. *bi guti*.

If beginning with *t* followed by a vowel, the *t* is converted into *d*: *tini* to find, pret. *bi dini*. If beginning with *x*, this is converted into *z*. And many of the verbs beginning with *tz* convert it also into *z*.

An equivalent for the passive participle is formed by prefixing the particle *ra* to the verb: *madi* to love, *ramadi* loved; properly, something which is loved, or "it is loved." The same particle annexed to adjectives has the same meaning: *nho* good, *ranho* a good thing, it is good.

On looking at the vocabularies of this language, a much greater number of words of two and even three syllables is found, than might have been expected from its presumed monosyllabic character. Most of these words are undoubtedly compounded; but we are informed by the author of this

grammar, that syncope prevails throughout the spoken language; and it may be that truly dissyllabic words may thereby assume a monosyllabic appearance.

Nouns cannot be syncopised unless when compounded with another word. From the verb *pa*, to sell, and from *thehna*, coal, is formed the syncopized word *na mathia*, a coalman; from *mantzo*, it is bad, and *na hmi*, the face, is formed *tzo hmi*, a bad countenance. The syncope of nouns is much less frequent than that of pronouns, verbs, and adverbs, and it cannot be reduced to fixed rules.

Most verbs lose their last syllable by syncope: *madi*, to love, loses the *di*; *di ma oqha*, I love God; *phey*, to whip, loses the *y*; *di phe na xua*, I have whipped John.

(Observe by the last example that the article *na* is used with proper names.)

The verbs ending in *ni*, *pi*, *te*, *ti*, *ke*, *ki*, and *tz* preceded by a vowel, lose the final vowel; *ahpi* to ask, *ap oqha*, ask God; *xohki* to open, *xohq na goxti*, open the door; *petzi* to have, to hold, *hinna*, no or not; *hin di petz nboqha*, I have no dinner. Sometimes the *tz* is changed into *x*: *phatzi*, to aid; *da phax oqha*, God help thee.

The primitive pronouns, *nuga*, *nugue*, *nunu*, when syncopized lose their first syllable, observing that, when united to various verbs, the syncopized *ga* and *gue* are converted into *ka* and *ke*. The syncopized pronoun is placed after the verb; but it must be observed that this can be done only when the verb itself is syncopized: *xadi*, to pray; if this verb is not syncopized, you cannot say for "I pray," *xadiga*. It would seem from the illustrations given, that sometimes the ordinary pronouns *di*, *gui*, are preserved, and sometimes omitted, when the corresponding syncopized pronouns *ga*, *gue*, are placed after the verb. The pronoun of the third person *nunu* is also syncopized into *nu*: he loves God, *y mahnu okha*. When the third person is named, this syncopized pronoun is omitted: *na Bednu y ma oqha*, literally, the Pedro he loves God.

When those pronouns are syncopized in the plural, their signs of plural, *he*, *gui*, *u*, must be placed after the verb.

The adverbs *nugua* here, *nuuu* there, *nupu* thereto, are likewise syncopized and lose their first syllable, when united with a verb, and become *gua* (or *qua*), *uu*, *pu*, placed after the verb; the negative *hinna* loses its last syllable, and becomes *hin*, placed before the verb: I do not wish, *hindinee*.

The objective cases of the pronouns, used in conjugating, are the following, always placed after the verb:

1st person,	Gui, qui	Plural,	Nugahe, gahe, ghe
2d "	Y		Gui, ygui
3d "	Bi, ba		Biu, bayu

From *madi*, (syncopized, *ma*) to love; *mahqui*, *madigui*, love me; *dimay* I love thee; *oqha y mahque*, (or, *mahcaguhe*), God he loves us. From *nu*, to see; *dinuy*, I see thee; *danugui*, he will see me. From *xip-hi*, to tell another; *xihqui*, tell me. From *umi*, to give to somebody; *umbi*, *umba*, give him. From *matzi*, (syncopized, *max*, *maxa*,) to aid, to help; *naxua bi maxa gui*, the Juan he has helped you; *bi max ba*, he has helped him; *bi max bayu*, he has helped them. No illustration is given in the grammar of the combination of the objective case of the pronoun with its plural nominative; which leaves it doubtful whether the pronoun in the objective case is placed before or after the sign of the plural of the nominative; whether "they love me" should be *y mahqui yu*, or *y mah yu qui*? (they love, is, *y mah yu*; he loves me, *y amah qui*). This should have been explained. For there is no passive voice proper; and this is always supplied by converting our passive form into the active. Thus, instead of saying, "I am loved," the Otomi always say, "They love me;" for which purpose the preceding form of compound conjugation must be used.

Various particles united with nouns or verbs, modify or alter their meaning. *Da*, denotes greatness; *bo*, darkness; *go*, respect, sometimes only emphatic; *na*, sometimes, hardship, cruelty: but in other cases, it gives to the noun a nega-

tive signification; *na nbadi*, the wise man; *na na nbadi*, the ignorant.

Ngui, or *gui*, denotes liquidity: from *da*, the eye, *ya guida*, the tears. *Me* sometimes refers to the origin or abode of persons: and sometimes it means ownership; *na me ngu*, the owner or master of the house. *Ga* refers to the matter of which something is made, or the purpose for which it is used; *nphoxiyo ga ccaxti*, a chandelier made of gold; and from *ngu* house, and *dathi* infirm, *na ngunga dathi*, the hospital.

Some other modifications of the verb are indicated. *Hehqui*, means to cut; *tzehqui*, to cut with an instrument. To give generally, *da*; to give to another, *unni*. To speak, *ma*; to speak to another, *xiphi*, or *zopho*. To awake (neuter), *nuhu*; to awaken another, *aa*. It appears by these last examples that the same distinctions are found in the Otomi as in the other languages; but that in order to express these, the Otomi, instead of a modification of the same verb, substitute a new and distinct verb.

In treating of nouns, the author does not allude either to the distinction of sexes, or to that of animated beings and inanimate things. But when treating of particles, we find that *nxu* (woman) prefixed to nouns of animals designates the female. And the distinction between animated and inanimate is discovered in several incidental illustrations.

Two particles denote negation or absence; *otho* which designates the absence or want of inanimate things; and *qhoo* which indicates that of animated persons. *Otho na thuhme*, there is no bread; *qhoo na maqha*, the father is not here, literally, not present the father; *qhoo na phani*, the horse is not here. He who, *to-o*; that which, *nua*. To stand; animated *buy*, inanimate *qha*. To carry; animated *tzitzi*, inanimate *hiatzi*. To receive; animated *tzini*, inanimate *hani*. To lift up; animated *patzi*, inanimate, if heavy *tutzi*, if light *thetzi*.

The particle *gue* is equivalent to our relative *who*.

the man who he loves God will go heaven
Na nyehe gue, y ma Ogha dama mahetzi.

Both *e* of *nyehe* are guttural; *ma*, loves, is *madi* syncopized; *dama* is 3d per. sing. future (*ch*) of verb *ma* (or, *pa*) to go. *Oqha*, *okha* God, (Powhattan, *Okee*; Sioux, Osages, *Wahkon*; Utchees, *Kauhwu*.)

Extracted from Emmanuel Naxera's Dissertation on the Otomi Language, published in the fifth volume, New Series, of the Transactions of the American Philosophical Society. Year 1835.

The learned author does not differ essentially from Neve y Molina in his account of the several vocal sounds: but he thinks that there is an analogy between these and the Chinese intonations. As great many words having distinct meanings are distinguished only by those various sounds or intonations of the same vowel, these in the written language should be distinguished by distinct signs. Even then many words having the same sounds and intonations have different meanings.

Words consist of one or two syllables; a few of three, probably introduced subsequent to the Spanish conquest. In words compounded of more than one syllable, each syllable preserves its original meaning.

The words, whether noun or verb, are inflexible. The nouns whether substantive or adjective have no gender. The particle *na* prefixed to the noun distinguishes it from the verb, and has the properties of the article. The plural of nouns is distinguished from the singular only by the substitution of *ya* or *ye* for the said particle *na*. In abstract nouns of qualities, the prefixed particle *na* is converted into *sa*: *na nheau yeh*, a good man; *sa nheau*, that which is good. The particles *na*, *ya*, *sa*, have no meaning. *Ye* means rain.

Verbs are conjugated by the help of particles, which designate both tense and person. Each tense has three parti-

cles, each of which has a singular and plural. This plural is always designated by the pronominal terminations, *he*, we; *wi*,* you; *yu*, they. The number of these particles (pronouns) is fourteen, and they have no proper meaning, being similar to the Chinese *vacuae*. There are only two moods, the indicative and the imperative. No particle is prefixed to the second person of the imperative: sometimes the monosyllabic verb is repeated; *te* to make, imperative *tete*: sometimes a noun or a verb is united to that second person; from *o*, recordira, and *kha*, facere, *okha* remember.†

This artificial mode of expressing the second person of the imperative must have been used before the invention of the above mentioned particles. And there was a time when the Otomites had not their present artificial mode of conjugation. Some traces remain of their ancient form of distinguishing tenses. The adjective particles *ma*, *ni*, *na* are sometimes used to express time; *ma* for the past, *ni* for the present, *na* for the future; rarely used indeed, which proves their antiquity; *ma pa*, a former day; *ni pa*, the present day; *na pa* a future day. The particles (pronouns) now generally used in the first singular person are for the present *di*, for the past *da*, for the future *ga*: and the Otomites sometimes say, *ni di ma*, I love; *ma da ma*, I have loved; *na ga ma*, I will love: (the last *ma* or *madi* to love;) which is superfluous and useless. The present mode of conjugation is similar to that used by the Mexicans and the Huastecas. The language in other respects is totally different. Therefore the Otomites must have borrowed this new system of conjugation from the Mexicans, and other more polished adjacent nations. In these three languages, Mexican, Huasteca and Otomite, the infini-

* *Gui* or *hu*, according to Neve y Molina.

† Aliquando verò vel nomine vel verbo adjuncto, non absimili significatione separato, ut recordari, *op'ho* recordari et cognoscere, recordare tu, nempè *scribe* (id enim sibi vult *op'ho*) et non semel tandem verba illa, *facere, exequi, uti, exercere, in executionem mandare*, verbo jungenda erunt; sic *o* recordari sibi, supra ut vidimus, vult, et *kha* facere; *okha* memento.

tive is wanted; and in all three the imperfect future supplies its place. On the other hand there is no similitude between the Otomite formation of the imperative and that of the two other languages. It is impossible that the Mexican, so rich in its conjugations, should have borrowed any thing from the Otomites. Therefore, the original Otomi had not its present form of conjugation, and must have received it from others. There is not in the Otomi any other voice or form but the active; there is not in that language either a passive voice or compulsive form, or any of those multiplied forms found in the other Indian languages.

The verbs are of one or at most two syllables. Absolute or primitive verbs (*quae sua ex natura sunt*) have never but one syllable: the second person of the imperative is formed by uniting that syllable with another verb. This second verb gives to the first an analogous but more intense or extensive sense. Therefore, all verbs, except the second person of the imperative, have but one syllable.

All the nouns may be verbs: for the Otomites, unable to extract the abstract idea of existence from the thing which existed, confounded both and had no substantive verb: *nheau*, good; *di nheau*, I good, meaning, I am good. This may be conjugated as a verb: in which case the particle *we* is added in the second person of the imperative; *nheau we*, be good, *memthi we*, be rich. Neve y Molina was mistaken in considering the second person of the imperative as the root of the verb, to which in that mood and person nothing was added. The verbs passed through three different states in the successive formation of the Otomi language; first when neither tense, mood, or person was distinguished; secondly, when the imperative was formed by the aid of another verb; thirdly, when the present form of conjugating was borrowed from another language.

However this may be, the verbs are altogether sterile. No participles, gerundives, or abstract nouns are derived from them. The same word, *madi*, means to love and love. The

verb *te* to make, added to another verb makes indeed a noun; from *ma* to love, *mate* lover; and prefixing the relative *too*, *toomate*, he who loves. Adverbs are not distinguished from nouns adjective: the same word means both.

From all that precedes, since the Otomi words are either monosyllabic, or, if having more than one syllable, each of these retains its former sense; and since all the syllables of the language have a signification and therefore are words, (with the exception only of the sixteen borrowed conjugating particles, and of a few instances where the ancient signification has been forgotten,) the Otomi language must be called and held to be monosyllabic. And as it is impossible that a monosyllabic should be derived from a polysynthetic language, we must seek for its origin elsewhere than amongst the Mexicans, the Tarascas, or any of the other languages of Anahuac.*

The learned author then points out numerous analogies between the Otomi and the Chinese, quoting in support of his opinion numerous passages from Remusat's Chinese grammar.

As there is a material difference between Mr. Naxera and Neve y Molina respecting the second person singular of the imperative, which this last author considers as the root of the verb, whilst Mr. Naxera asserts that it is formed generally by the union of certain specified verbs with the roots of all the verbs, sometimes by the union of nouns and adverbs, sometimes by a duplication of the verb, some of the examples given by him will be added, preserving his Latin equivalents.

From			
	te,	facere,	
			Imper.
and di	*te*,	facio	tete, fac
gui	*he*,	corrumpis	hete, corrumpe
gui	*we hu*,	apponitis	wete, appone

From			
	ni, exigere, germinare; *hi*, intus esse		
			Imper.
and	*me*,	mereri	meni, merere
	p-he,	cogitare	p-heni, cogita
	ye,	curare	ye hi, cura

From various adverbs and nouns,			*Imper.*
se, sudare,	*he*,	agua	sehe, suda
za, volare,	*wi*,	simul	zawi, volato
ze, visitare,	*we*,	hic	zawa, visita

From *tse*, evenire; *tse*, efficere; *tsi*, ferre,			*Imper.*
and	*sei*, extrahere		saitsa, extrahe
	he, coquere		hetse, coque
	hiu, ponere		hiutsi, pone

From *ti*, *di*, exequi,			*Imper.*
and	*ña*,	promittere	ñati, promitte
	ma,	amare	madi, ama
	hia,	videre	hiadi, vide

From duplication of the verb,			*Imper.*
	tsu,	timere	tzutzu, time
	ne,	velle	nee, volito
	hu,	nominare	huhu, nomina

* The author subsequently mentions the *Mazahui* as another monosyllabic language of Anahuac, which he states to be a sister tongue of the Otomi.

Mr. Naxera further states that when an adjective is conjugated as a verb, the second person singular of the imperative is formed by adding the particle *we*; *nho*, good, *nhowe*, be good; *ne*, strong, *newe*, be strong; *te*, something, *tewe*, be something.

Mr. Naxera gives various examples of compounded words, almost all formed in the most simple way, by the union without any alteration of the two primitive words. *Da* much, *he* water, *dahe* a river; *hia* light, *di* to produce, *hiadi* the sun. *ka* yellow, *sti* surface, *kasti* gold; *ne* the mouth, *si* a leaf, *sine* the lip; *ne* the mouth, *hia* a word, *nehia* a babbler; *yo* double, *hmi* the face, *yohmi* perfidious; *pho* to adorn, *ye* the hand, *p-hoye* a ring; *do* a stone, *gua* foot, *dogua* lame; *do* a stone, *do* a stone, *dodo* stupid; *go* a stone, *da* the eye, *goda* blind.

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(7) COMPARATIVE VOCABULARY.

	OTOMI.	MEXICAN.	HUASTECA.	MAYA.
Man	nanyehe	tlacatl	inic	uinic
Woman	nzitsu, danxu	ciuatl	uxum	ixal
Male	ta	oquichtli	inic	xibil, xib
Female	nsu	ciuatl	uxum	dchupul
Father	ta	teta, tatli	paylom	yum
Mother	me	tenan	mim	na
Son	bahtsi, hy, iso	tepiltzin, tetel-	atic	mehen, lakpal
Daughter	nsubahtsi, tisu	teichpuch [puch		ixmehen, al
Children		ocatl, xochtic		palal
Husband	dame	oquichtli	illau, tomol, pizoub	ychan
Wife	datzu, qhuada		ixal, tomol, pizob	atan
Brother	cu	teacheauh (elder) / teiccauh (young.)	atmim / atatal xibam	sucuum, uidzin
Sister	nqhu, cu	teciuapo (elder) / teicauh (younger)	ixam bayil / acah	zucun, idzin
Head	na, nasinu	totzontecon	oc	pol, hool
Hair	si	tomitl	jujul	tzotzel, tzotz
do. of Man	sta	totzon, totzontli	xil	tzotzel pol

	OTOMI.	MEXICAN.	HUASTECA.	MAYA.
Eyes	daa	ixtololotli	hual	uich, tuknel
Nose	siu	yacatl, toyac	zam	ni
Mouth	ne	camatl	huy	chi
Tongue	ghane	nenepilli ?	lecab	uak
Tooth	tzi	totlan, tlantli	camablec	co
Hand	ye	maitl, toma	cubac	cab
Foot	gua	icxitl	acan	uoc, oc
Blood	qhi	ezdli	xihtz, xihtzal	kik
Bone	ndoyo	omitl	beclec	bac
Animal	baoni	yulqui	bichim	balche
Dog	tzahtyo	ytzcuintli	pico	pec
Rabbit	qhua	tochtli, tochin	coy	thuul
Deer	phantehe, hoc-	mazatl	tenecbichim	ceb
Snake	qqena [phani	coatl	tam, mabac, lau-	can
Bird	ttzintzy	tototl	tzitzim [che	tchitch
Egg	mado, doni	tetl ?	zacchoc	he
Meat	nhihuni	tlaqualli	tullec	bakel, baak
Flesh	ngoe	nacatl	tul	
Fish	hua	atlan, michin	tol	cay
Tree	bay, rza, camrza	quauitl [celtia	te	che
Forest	borza	quaquauhtla, tla-	[em, guay	cana caax
Maize	detha	tlaolli, centli	zuluc, ajam, iziz,	ixiim
Bread	thume	tlaxcalli	bacam, catut	uah, pacak
Beans	qhy	etl, ayecotli ?	tzanaco, pucul, hualcoy, zacchococho	buul, pecuah [luuch
Hill	tthehe	tepetontli		hool luum, mu-
Mountain	xantle, ganthe	tepetl	tzen, alte	canauitz, mul
River	dathe	atoyatl	hualja	ukum, yocha
Lake	mohe, posdehe	vey atezcatl	lejem	akal
Island		veyapancatlalli, tlauactli		peten
Sea	munthe	ylhuicaatl, ane-	tzoclejem	kaanab
Fire	tzibi	tletl [catlan		kaak
Water	dehe	atl	ija	ha
Earth	hay	tlalli	tzabal, anam, po-	luum
Stone	do	tetl	tujub [jod ?	tunich
Sun	hiadi	tonaliuh	aquicha	kin
Moon	rzana	metztli	aytz	u
Sky	mahetzi	ylhuicatl	tiaeb	caan
Star	tze	citlali	ot	ek
Day	pa	tlactli, cemilhuitl	oquicha	kin
Night	sui	youalli	acal	acab
Month	zana	metztli	aytz	u
Year	gheya	xiuitl	tamub	haab
Rain	ye	quiauitl	ullel anja (to rain)	kaaxa ha, cha-
House	ngu	calli	ata, quima	na, atok [ne

	OTOMI.	MEXICAN.	HUASTECA.	MAYA.
Hut		tlapixcalli	pazel	zani na
Hatchet	ttagi	tlateconi		caye baat
Shoes	zethsi	cactli		obiha, pay
Knife		uizitli		mazcab
To eat	tzi, tza	qua	capul, capal	hanal
To go		yauh		
To see	nu	tlachia	tzutal	ilah
To sleep	aha	cochi [(l)	huayal	uenel
To die	tu, du	nimiqui, nipolive	tzemel	cimil
To kill	ho, hio	miclia, popoloa, nomac, miqui	tzemza	cimzah
White	ttazi	yztac, teztic	zacni	zazac
Black	boi, bothi	tliltic, yapalli	ejec	e-ek
Red	ntheni	quacococztic	tzacni	chac, chachac
Blue	ccangui	texatli	yaxuxul	
Green	buethe	quilpalli	yaxni	
Cold	tzaa	ytztic, cecuitztli	tzamay, tozob	sis
Hot	pa	totonqui	cac	choco
Great	nah, nde	vey, yxachi	pullic, pacza	noh, nohoc
Tall	nhetsi	quauhtic	tecat	
Small	ttygy, notzi	tepiton, tlocoton	tzicat	mehen,chichen
Good	manho, niza	qualli, yectli	alhua	utzul
Bad	hing,iho,nantzo	ayecyotica, amo-	atax	lob, kakas
A chief	hmu, nogue	[yue	tzalle, inie, atque	holpop
A king		tlacatl		ahau
Friends	ntybe	tzicniuh, ycnih-	atzo, atcochim	etail
Enemies	noogui, ytzagui	teyaouh [chitli	vtouhnal	ahual
War	magagui	yaoyotl,necaliztli	huatzilab	katun
Boat		acalli		
Canoe	mohtza		tam	chem
Wall	ghoti, ghado	tepantli	tiab, jem	tulum pak
Grave	he, otzei, yagi	tlatatactli	jol	mucnal
Fortification		yaocalli		pa
Idol	hetqha, phetriqha	teteutl	ilaltujub, teem, tzolcutz,bialtujub	kukat
Yes	haa	queme, yye	oni, nana quiz	ta
No	hinna	amo	ib, ibatz	ma
Near	guethua		timba	nadzan
Far	yanih		ouh	naach
From	nbepha		tayl, cahuil	
Now	nuya			behelac
Air	ndahi	ehecatl	ik	lkikal
Afternoon	nde	teotlac	huacal	zezikin
Arm	yani, ya	neitl	ocob	kab
Ant			itzanitz, lac	zanac
To ascend,	poettze	tlecoltia	cazi	nacal
Bat [rise	tzamshagu			zodch

	OTOMI.	MEXICAN.	HUASTECA.	MAYA.
Bath	hili [nmye	nealtiloyan	nachin	katchu
Belly	bite, bombi,	hitetl	chucul	nak
Birth	mi, poenbite	tlacatiliztli	elel, eltalab	zizian
Blind	goda	yxpopoyutl		eknai
Body	ghai, hanqqiei	tonacayo		uinctil
Bow	za	tlaoitolli	pullab	pump
To break	yaxqhi, sogi	tlapoa	hapi, pecoy	
Calabash	mu, mamu	ayutli	calam	
Cane	sothi, heyyo	acatl	pacab, tamach	
Chamber	oy	cochiuaya	tzacoy ?	uain, cacal
Cheek		catli, tocan	tzaub	ppuk
Circle		yaualtic	cuxcum	peet, petil
Cloudy	gui	mixtli	tocob	nocoyan, mo-
Courage	cu	patiyotl		ikal [sican
Court	denthi, pathi	totcoyan, ythualli	eleb	
Let it come	ehe	uallo, uitz	ullel	tac
To dance	nei	itotia, maccua ?	bixom	okot
To desire	ttziya	clevia, icolta	tehenal	dchibotal
To descend	cai, gai	temo	letzat	
To deliver	poeha	cuitlalaca	louh	tocoon
Door	gosthi, nyytti	calacouayan	huyleb	
To drink	tzi, tzithe	atli	utzal	ukul
Duck		canauhtli		cutzan
Eagle	xyni, syni	quauhtli		koot
Ear	gu	nacaztli, tonacaz	xutzum	tsechekin, lee-
Elbow	yyni	molictli	ttyic	kue [xicen
To enter	cytti	calaqui	ozel, otzis	ocol
Evil	nttzo, hingiho	aqualtiliztli	atax	lob
To fall	tagi, dagi	niuetzi	bolquin, qualam,	neuel, lubul
Family	qhai	techantlaca	[puhtlin	balnal, cuchtil
Fast	behe	nino cauani	pahil, jayllamlab	tumut
Fat	natteqqei	xuchiotl		yek
Fear	ttzu	nimaui, liyocopini	tzenal, jiquel	zalehaotal
Feather	sini, sihui	yuitl	juclec	kukum
Fields	batha	teotlalli, yxtlautl		hotok, bitun
Fight	ncasi, tuhni	yaochiua, icali,		tok
Fingers	zaha	mapilli [otla	cubaclee	jalcab
Thumb	dadedo	toueymapil	mim ucuba e	naacab
Middle finger	made		tzejel do.	chumucab
Ring do.		ma	tzutzul do. (little)	ahoipit (ring)
Index do.		[piloa	tayl do.	tuchub
To fish	pahua	tlatlama, michpi-	tahbal	tchoukai
Flame	phazhi	tlecomoctli	lahax, xtaza	tetchka
Flint	asdo, dotzbi	tecpatl	camaltujub	tok
Fog	boengi	ayauitl		ye-eb
Foreigner	nes m'ahe	veentlacatl	ulel inic	chuloinic
Forgive	punni	tlapapolhuia	paculamchtal	zaatic

	OTOMI.	MEXICAN.	HUASTECA.	MAYA.
Froth	phygi	poconallotl	xujal	om
From, in	bepha	qain, catepan	tahuil, tayl	ti
Fruit	doengahu	tomacayotl	hualil, huytzcap-	ytch
God	oqha	teotl, teutl	[nel	ku, kumina
Gold	ccastti	tetlcocauqhi	mantaquin	kantukin
Half	made	centlacol		tanko
Hammock	tto, nttzqni		tzey	uey, chae
Hare	side, deqhua	cinli		halu, tzub
To have	qua, pettxi	notechpoin	teyna	
Heart	myi	toqollo, yullotli	ichich	puxcical
To heat	pa	totoniliztli (heat)	michcacal (wea-	kilkab
Hail	ndo	teciuitl	tujubab [ther)	bat
Honey	patphi, ttaphi	necutli	chabchan, tziim	cab
Hunger	thuhu	mayanaliztli	caynab	uuh
To hunt	pa	ami		tzonai
Image	npoetcui	teixiptla, tequacuilli	qaothil, bialtujub, ilal, teem, tzol, term	uimba
Infirmity	hienni, gehe		yaul-atz	[nil chapail, koha-
In	gha	pa, co, titah, pac,		
Jar	bada	apilolli [e	chucpub	hulat, zaleb
Kingdom	zunda bye	veytlatocayotl		ahaulil
Kettle	tzamqua	tepui, tipaxtli		mazcabcun
Knee	nahmu	tlanqueitl	machuchul	pix
Lead	boezna	temeztli	paluh patal	tau
To learn	padi, deji			miatzil
Let us	hegi, hopi,	yunicanna	hilal, hualcal	apatic-ca
Lie	satte(liar), pha-	nexatl	nanuncauh	tuz
To lye	bani, nai [thri	nino tlea (I)		aluc, alancal
Light (the	hiattzi			zazil, zub, zaz
Lightning	nhuei	tlapetlaniliztli	ley	tembacil
Lizard	matga, botga, ttzathi	cuetzpalin	agin, tzalich	tizmamech, xzeluah
Living	te, byi		kehtz	ahcaxan
Love	madi	tlacotla	canezal	yecunah
Midnight	madensui	tlacoyouac, youalnepantla	tzejelacal	tantchoumou- [kabac
Monkey	rzypa	ozomatli	cuchim	maax
To-morrow	nisudi, rihiatzi	muztla, yciuh		
Morning	sudi	tlauiztalpan, [nonchipa calam ! youatzinco, icippa		saamal
Early morn'g	hiatzi	yotlaztaya, yet-		jaascub
Nobody	ghoo, hintie	ayac [laneci	ibxita	mamac
Nothing	otho, hinte, ayg	atley, machitla	ibax xata	mabal
Noon	huaxadi	tlaco [tlepautla] tonatiuh		

	OTOMI.	MEXICAN.	HUASTECA.	MAYA.
North	m'ahuihgi,m'o-	mictlampa	tzaylelqui (wind)	nohol
Owl	tucuru [by	tecolotl	otzouh	icim
Over, on	m'asoettze,m'a-	ypan		okol
Pain	dumyi [na	tlacaellotl	tehpintalab, yah-	yeh,yoil,kinam
Market-place	tei	tianquiztli, tlana-	[benib	kinic
Partridge	tuthu	tepeculin, [maco	huchul	num
Pigeon	doiyha	uilotl	cucum, puchum	zacpacal
To produce	sei, poente, pohehohe	quix tla, tlema-mali	catza	alancal
Promise	natti	teneua, tlatlalilia		zobchiil
Provisions	hiuni	cochcayotl tlaqualli		nech
Rainbow	beccni	cocamalitl	pitzal	cheel
Ring	nphoye	matzatzaztli		opit, cab
Rivulet	tzidatha,hienthe	atagatontli		haltun
Salt	u	yztatl	atem	taab
Savanna	batha, ndapo	tlacetiayan	tzallam	potche
Shade	sudi, summi	cenalli,ecauhyotl	tzallam	booy
To sing	tuhu	ni, cuica (I)	jatin	kaay
Sins	ttzogi	tlatlacolli	hualab	ziipil
Skin	si, siphri	euatl	ot, otol	keuel, ot, otol
Spider	mexe	tocatl	uam	am
South	m'adatti	ciuatlan, vintlan	quahtalqui (wind)	chanian
Squirrel	mina		otell	cub, cuceb
Storm	bynthi	atlatla, amamani	ley	chacatcal
To swallow	tutti, cymmi	nitla, toloa (I)	cutu	cusan
To swim	saha he mansi, cynthe	nitla maneloa (I)	coulatz	tahal
Sword	daquhuai	tepuzmacquanitl		haeab
Table	sitho	tlaqualoni, tlapechtli	octza	mayac, maya-chin (stone)
To take	ha, hiani	niccui, nicana (I)		chaa
Tear	gida	yxayotl	jalinhual	kobich,yatilich
Temple	nigha	tlayamaniliztli	teopam,inquima	machunhach
Thirst	nduthe	amiqui, amiquiztli	thiquel	chakbakal
12 o'clock	huxa di, hiusadi	tlaco nepantla tonantiuh		
Thorn	mini	tzaptei, auatl	quiz	hiix
Thunder	nyqnni	tlatlatziniliztli	ululul, tincail	humchac, peechac
Thus	nghaby, singua	yui, yuhqui	atzitz, antzana	bei
Tiger	rzute	ocelotl	pazum	balam,chaczkel
To-day	napaya, nuya	axcan	xahue	bejelae
Turtle	saha	ayutl	pet	ac
Temptation	ltzo ccadi	teyeyecoliztli	tahca	tahatahe
Voice	hia		inuc	than
Virgin	hmute	ocuelychpuchtli	chizan, zaquilcach	zuhui

	OTOMI.	MEXICAN.	HUASTECA.	MAYA.
To wake	yomi, dinuhu	ixtoxcoua, quixtoc		ximbal
To walk	yooni	panauia, nalquica		ximbalni
Washing hands	sygi, peeni	nitlapaca (I)		pokolkalb
To weep	rsoni	nichoca,nixayo(I)	uquin, venal	okol
A well	cyytzi, qhyttzi	atlacomalli	mum	che-en
West	yyhiadi, mayyi	ycalaquian toniatuh	oxal qui (wind)	chikin
Wheel	gura, tzantli	telamacatl		cococ
Will	hnee	cealiztli,canequiztli	tehe naxtalab	olha, uhola
Wing	hua	aaztli, atlapalli	impalab	xik
Wolf	muhu, tzute	mayaquen		cabuh
To work	paphi	tequipan ah	tohnal, tohlab	meyach
World	simahri	cemanauatl, tlalticpac	tehuaycayial	jococab
Year	naqheya	xiuitl	tamub	oumpehab
Yesterday	mande	yalhua		hoolje, joolje

APPENDIX NO. II.

NOTES ON

LORD KINGSBOROUGH'S COLLECTION OF MEXICAN PAINTINGS, &c.*

Lord Kingsborough's collection comprises fac-similes of the following Mexican paintings and hieroglyphics, viz.:

3d vol.	Codex	Vaticanus, No. 3776,	plate	96
do.	"	Borgianus of Veletri,	"	76
2d vol.	"	Bologna	"	24
3d vol.	"	Pess Hungary, of Mr. Fejervari	"	44
2d vol.	"	Oxford, Archbishop Laud,	"	46
do.	"	Vienna,	"	66
1st vol.	"	Oxford, Bodley,	"	40
do.	"	Oxford, Selden,	"	20 & Roll
2d vol.	"	Berlin, de Humboldt and Bas Relief,	"	19
3d vol.	"	Dresden,	"	74
1st vol.	"	Boturini,	"	24
2d vol.	"	Vaticanus, No. 3738,	"	149
1st vol.	"	Paris, Teller[s] Remensis,	"	93
do.	"	Oxford, Mendoza's collection,	"	73

The three last are compilations made since the conquest; the dates of the other can only be conjectured from internal evidence, and their origin is unknown. The well known Mexican hieroglyphics of the days of the month, and of the years of the cycle, afford means of ascertaining, to a considerble extent, the subject of which they treat respectively.

* There was no copy of this work in New-York. Mr. Prescott kindly lent me the volumes which contain the Mexican manuscripts or paintings; and I am also indebted to him for Gama's second edition and several other books.

These hieroglyphics are found in almost every plate of all the manuscripts, with the single exceptions of that of Berlin, which was brought from Mexico by the Baron de Humboldt, and of that of Dresden. All of them, therefore, except this last, are certainly of Mexican origin. This exhibits characters which have the appearance of symbolic, if not phonetic hieroglyphics. The inscriptions found at Copan and Palenque, and transcribed by Mr. Catherwood, seem to belong to the same family, and it is not improbable, that the Dresden manuscript was found in Yucatan or Central America. We have as yet no key, or any means of discovering the meaning of either that manuscript, or the said inscriptions.

The manuscripts of a chronological or historical character, are easily recognized by the hieroglyphics of the series of years which they exhibit. The manuscripts of that class are only that of Boturini, the first part of Mendoza's collection, the fifty-nine last plates of the Codex Vaticanus No. 3738, and the forty-seven last plates of the Tellerianus; all which, Boturini's perhaps excepted, are of a date subsequent to the conquest. In all these the year alone is designated; the day of the month or year never appears. These historical paintings, and the two last parts of Mendoza's collection have already been discussed in the fourth section of this Essay.

Several plates of the Berlin manuscript exhibit the genealogy of the princes of Azcapozalco: fifteen of those of the Vaticanus No. 3738 (plates 75 to 89), are representations of the dresses and some other peculiarities of the Mexicans. All the other manuscripts, or parts of manuscripts, appear to me to refer principally, if not exclusively, to the religious worship, the mythology, the feasts or ceremonies, and the judicial astrology of the Mexicans. The Codex Vaticanus No. 3776, and the Borgianus are eminently of that character.

It has already been shown, that the combination of the two series of the twenty days of the month, and of the period of thirteen days, produced a period of only 260 days, which had

no connection with the solar year, and yet was that which the priests had adopted, and by which their feasts were regulated. Sahagun contends, that it was used principally, if not exclusively, for the purpose of ascertaining the fate, or drawing the horoscope of those born under the influence of each of those 260 days. It is certain that the whole period was divided into twenty periods of thirteen days each. Gama has given in his calendar the names of the deity or deities, who governed each of those twenty *trecenas* or periods of thirteen days. And he states expressly that the same signs and planets which did govern the eight first trecenas, did again govern respectively the eight last; in other words, that the priests counted by periods of twenty trecenas or two hundred and sixty days; without regard to the solar year. The invention of this period, adapted to religious or astrological purposes, must therefore have been of very early origin, and have preceded the time when the Indians had acquired sufficient astronomical knowledge to ascertain the length of the solar year. The manner in which they adapted their feasts and ceremonies to that year is not clearly stated. But it must be inferred that, after having dedicated the last eight trecenas, or 104 last days of the year, to the same deities respectively who presided over the eight first trecenas, they again began the new year by a similar repetition.

Gama repeatedly alludes to a work called Tonalamatl, from which he has borrowed the names of the above mentioned presiding deities. This, it would seem, must have been a painting, and is probably still to be found in Mexico. If so, its publication might throw considerable light on the subject. It is at all events certain, that no regard whatever is paid to the solar year in the Mexican manuscripts now under consideration, and that a considerable portion is devoted to the twenty trecenas, which constitute the period of two hundred and sixty days.

Each of these twenty periods of 13 days or trecenas ne-

cessarily begins on a different day of the month, as appears by the table C, in which the letters a, b, ... h, i, represent the nine Lords of the Night. But neither these, nor the numbers 1 to 13 appear in those plates of the Codex Vaticanus No. 3776, or of the Borgianus, which exhibit the period of 260 days. Each day is distinguished only by its own hieroglyphic and the number of the trecena in which it is found; and the number of the trecena is discovered by the hieroglyphic of the day by which it begins.

It appears from the table C, that the several trecenas, or periods of 13 days respectively, begin on the following days.

First	trecena on	Cipactli	1st day of the month.	
Second	"	Ocelotl	14th	do.
Third	"	Mazatl	7th	do.
Fourth	"	Xochitl	20th	do.
Fifth	"	Acatl	13th	do.
Sixth	"	Miquiztli	6th	do.
Seventh	"	Quiahuitl	19th	do.
Eighth	"	Malinalli	12th	do.
Ninth	"	Cohuatl	5th	do.
Tenth	"	Tecpatl	18th	do.
Eleventh	"	Ozomatli	11th	do.
Twelfth	"	Cuetzpalin	4th	do.
Thirteenth	"	Ollin	17th	do.
Fourteenth	"	Itzcuintli	10th	do.
Fifteenth	"	Calli	3d	do.
Sixteenth	"	Cozcaquauhtli	16th	do.
Seventeenth	"	Atl	9th	do.
Eighteenth	"	Ehecatl	2d	do.
Nineteenth	"	Quauhtli	15th	do.
Twentieth	"	Tochtli	8th	do.

The twenty plates No. 29 to 48, of the Codex Vaticanus No. 3776, and the ten plates No. 45 to 54 of the Codex Borgianus, exhibit the series of these twenty trecenas, or periods of 260 days.

In the Codex Vaticanus, each plate represents a trecena; and the hieroglyphics of the days of the month must uniformly be read from bottom to top, and from right to left. But the

plates follow each other in inverse order, that is to say, beginning with plate No. 48, and ending with plate No. 29. In the annexed representation of the two first trecenas, the numbers 1 to 20, which indicate the 1st, 2d, ... 19th, 20th day of the month, have been added, but are not found in the original plates of either Codex. The first trecena begins with Cipactli, and ends with Acatl: the second begins with Ocelotl (next day to Acatl) and ends with Miquiztli. The third begins with Mazatl, next day to Miquiztli, &c.

	Days of the month.							
First trecena Plate 48 begins *Cipactli* ends *Acatl*	13	12	11	10	9	8	Mazatl	7
	Acatl	Malinalli	Ozomatli	Izcuintli	Atl	Tochtli	Miquiztli	6
							Cohuatl	5
							Cuetzpalin	4
							Calli	3
	Mythological Figure.						Ehecatl	2
							Cipactli	1
								Days of the month.
	Days of the month.							
Second trecena Plate 47 begins *Ocelotl* ends *Miquiztli*	6	5	4	3	2	1	Xochitl	20
	Miquiztli	Cohuatl	Cuetzpalin	Calli	Ehecatl	Cipactli	Quiahuitl	19
							Tecpatl	18
							Ollin	17
							Cozcaquauhtli	16
	Mythological Figure.						Quauhtli	15
							Ocelotl	14
								Days of the month.

And so on to the 29th plate, or 20th trecena, which begins with 1 Tochtli and ends with 13th Xochitl.

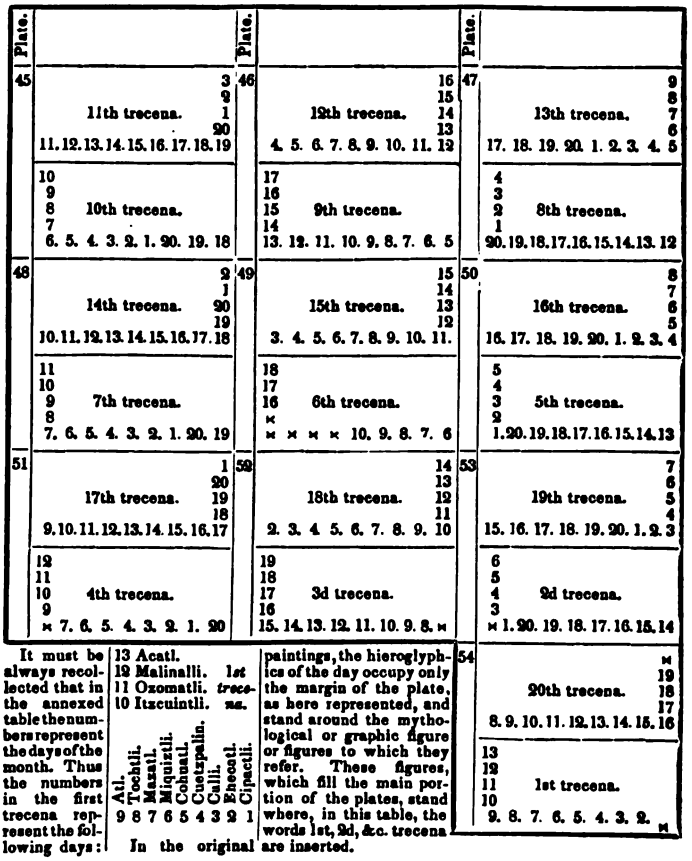
In the Codex Borgianus each plate comprises two trecenas, one placed above the other; but they do not follow each other in that order. The first trecena, beginning with Cipactli, is placed at the bottom of the plate No. 54: the second trecena is placed at the bottom of the plate No. 53; and you must thus read successively the trecenas placed at the bottom of each plate from that No. 54 to 45, the trecena at the bottom of which last plate is the tenth. And then follow the trecenas placed at the top of each plate, beginning with that at the top of the said plate No. 45, which is the eleventh trecena, and ending with that at the top of plate

No. 54, which is the twentieth and last trecena. All the trecenas at the bottom of the plates must be read from right to left and from bottom to top: and all those placed at the top of the plates must be read from the left to the right, and from bottom to top. This will be best explained by the annexed table: but as in the various explanatory tables, it would be inconvenient to repeat perpetually the names of the days of the month, the numbers designating such days will be substituted for the names, or more correctly for their hieroglyphics in the original paintings, viz. 1, 2, 3, &c., meaning the 1st, 2d, 3d, &c., day of the month, will be respectively substituted for the hieroglyphics of Cipactli, Ehecatl, Calli, &c., that it is to say:

1 for Cipactli	6 for Miquiztli	11 for Ozomatli	16 for Cozcaquauhtli
2 " Ehecatl	7 " Mazatl	12 " Malinalli	17 " Ollin
3 " Calli	8 " Tochtli	13 " Acatl	18 " Tecpatl
4 " Cuetzpalin	9 " Atl	14 " Ocelotl	19 " Quiahuitl
5 " Cohuatl	10 " Itzcuintli	15 " Quauhtli	20 " Xochitl

It may be observed that the above mentioned mode of reading proves that Gama was mistaken in supposing that the hieroglyphics of the days of the month must always be read from right to left.

The 20 TRECENAS, *or Periods of* 13 *Days, making together the Period of* 260 *Days, Codex Borgianus.*



It follows from what precedes that the plates No. 48 to 29 of Codex Vaticanus No. 3776 correspond respectively, with the plates No. 54 to 45 of the Codex Borgianus in the the following order, and it will be seen hereafter that they

also correspond with the plates 17 to 56 of the Codex Vaticanus No. 3738, and with the plates 1 to 33 of the Codex Tellerianus.

	Plates.		Plates.	
Trecenas.	Vaticanus No. 3776.	Borgianus.	Vaticanus No. 3738.	Tellerianus.
1	48	54 lower part.	17, 40	— 1
2	47	53 do.	41, 22	2, 3
3	46	52 do.	23, 18	4, 5
4	45	51 do.	19, 20	6, 7
5	44	50 do.	21, 24	8, 9
6	43	49 do.	25, 26	10, 11
7	42	48 do.	27, 28	12 —
8	41	47 do.	29, 30	— 13
9	40	46 do.	31, 32	14 —
10	39	45 do.	33, 34	— 15
11	38	45 upper part.	35, 36	16, 17
12	37	46 do.	37, 38	18, 19
13	36	47 do.	39, 42	20 —
14	35	48 do.	43, 44	— 21
15	34	49 do.	45, 46	22, 23
16	33	50 do.	47, 48	24, 25
17	32	51 do.	49, 50	26, 27
18	31	52 do.	51, 52	28, 29
19	30	53 do.	53, 54	30, 31
20	29	54 do.	55, 56	32, 33

In comparing the plates of the two Codices, Vaticanus 3776 and Borgianus, according to the preceding order, the mythological figures annexed in each Codex to the corresponding trecenas, will also be found to correspond with each other. There is some variety in the details, sufficient to show that one Codex is not the copy of the other, but that, so far as relates to this period of 260 days, they have a common origin. The greatest difference is to be found in the figures annexed to the first trecena, plate 48 of Vaticanus, and plate 54 of Borgianus at bottom. The 48th plate of the Vaticanus is the representation of what is called the serpent-woman;

and Baron de Humboldt's plate No. 13 is a copy of it.* In this the serpent stands as if suspended in the air in a vertical position opposite to the woman, and as if speaking to her. Next to them are two boys fighting, one of whom has overset the other. Under are two stools or altars, one of which is overset. In the corresponding 54th plate of the Codex Borgianus, the serpent lies at the bottom of the plate and not at all opposite to the woman; the two boys instead of fighting are placed in a very friendly posture; and there is no trace of the two small altars. It is clear that in the Vaticanus we have the original sin, the murder of Abel, and its immediate cause. This looks very much like a monkish interpolation: and this suspicion is strongly corroborated by the fact that, out of the forty plates embraced in that period of 260 days, this is the only one in which there is an essential difference between the Codex Borgianus and the Vaticanus No. 3776.

The only other Mexican manuscripts in which this period of 260 days or twenty trecenas, arranged according to their natural order, can be found, are the Codex Vaticanus No. 3738, and the Codex Tellerianus: both which will be hereafter separately examined.

Another, but more complex and singular arrangement of the same period of 260 days is to be found in the Codex Vaticanus No. 3776, plates 49 to 56; in the Codex Borgianus, plates 37 to 32; and in that of Bologna, plates 1 to 8. These plates have been erroneously divided: the plates 49 and 50, 51 and 52, 53 and 54, 55 and 56, of Vaticanus are each but one plate, corresponding respectively with plates 37 and 38, 35 and 36, 33 and 34, 31 and 32 of the Borgianus, and with plates 1 and 2, 3 and 4, 5 and 6, 7 and 8 of the Bologna, which are also respectively each but one plate. Each of these double plates contains five lines, and each

* It appears that this manuscript is so folded that the pages may be numbered in different ways. This 48th plate according to Mr. Aglio is designated as the 96th by Baron Humboldt.

line one trecena. Each line is to be read from left to right in the Vaticanus and the Bologna; and from right to left in the Borgianus.

In order to read the trecenas in their natural order, you must, in each Codex, begin with the fifth line of each of the double plates successively; and then follow in order the fourth, third, second, and first lines of each double plate. This will be best explained by the table F: always recollecting that the numbers in the table represent the hieroglyphics of the days of the month in the original paintings. Thus, the line at the top of the plates 49–50 (which are in fact but one plate) of the Codex Vaticanus No. 3776, and which must be read from left to right, represent the hieroglyphics of the following days of the month, viz.:

9th	10th	11th	12th	13th	14th	15th days of the month.
Atl,	Itzcuintli,	Ozomatli,	Malinalli,	Acatl,	Ocelotl,	Quauhtli,
16th	17th	18th	19th	20th	1st	do. do.
Cozcaquauhtli,	Ollin,	Tecpatl,	Quiahuitl,	Xochitl,	Cipactli,	

and all the other lines must be read in a similar manner.

On comparing the mythological figures which appear in each Codex, above and below the lines containing the hieroglyphics of the days of the month, I did not find the same correspondence between them which appears in the former case.

The Jesuit Fabriga,* author of a commentary of the Codex Borgianus, found, or thought he found, in four pages of it, the indication of twenty cycles of 52 years, making a period of 1040 years. At the end of that period, amongst the hieroglyphics of the days, and reading them from left to right, the sign of the day Tochtli (the 8th of the month) immediately precedes the sign of the day Cozcaquauhtli, which is the 16th day of the month; so that the seven intermediate

* I have not seen the volume of Lord Kingsborough's collection which contains Fabriga's commentary; and I quote from Humboldt's extract. Monuments, Vol. II. p. 82. He refers to the plates 48–63 of the Codex.

days are suppressed. Father Fabriga supposes, that that omission indicates a periodical reform by the Mexicans of the Julian year, because a subtraction of seven days, at the end of a period of 1040 Julian years of $365\frac{1}{4}$ days each, brings back that year to one of $365\frac{242}{1000}$ days; which is but about one minute and a half longer than the solar year. This presumed intercalation is altogether different from that erroneously suggested by Gama, and would ascribe to the Mexicans a still more accurate and almost incredible degree of Astronomical knowledge.

I have not been fortunate enough to discover in any of the plates of the Codex Borgianus, the indication of a period of 1040 years. There are indeed in the plates Nos. 55, 56, 57, a number of circles, some large, some small, which may indicate a certain number of years: but whatever value may be assigned to those circles, it is impossible to find any combination which could produce the period of 1040 years. Admitting however that such period may be extracted from these, or any other plates of the Codex; the inference drawn by Fabriga, from the arrangement of the hieroglyphics of certain days in the next ensuing plate No. 58, is altogether erroneous.

The beginning of the first line of hieroglyphics in the 58th plate of the Codex Borgianus comprises those of five days of the month, arranged in the following order.

Malinalli,	Xochitl,	Tochtli,	Cozcaquauhtli,	Cuetzpalin,
Twisted Grass,	Flower,	Rabbit,	Bird (so called),	Lizard.
12th	20th	8th	16th	4th day of month.

If this be read from left to right, there are seven days omitted, not only between the signs Tochtli and Cozcaquauhtli, but between all the signs which constitute that series. If read from right to left there are eleven days omitted between the signs respectively. To infer that this indicates an astronomical correction of the Julian year, is a most

gratuitous and wild assertion. There is on the same plate another similar series, five times repeated, of hieroglyphics of days of the month, viz., the 1st, 9th, 17th, 5th, and 13th days of the month, in which the days are placed precisely at the same distance one from the other, as in the first mentioned series. Moreover, this series of the 12th, 20th, 8th, 16th, and 4th days of the month is found in not less than four other plates of the Codex Borgianus, viz., in plates Nos. 19, 20, 21, and 49. And it cannot certainly be denied, that in each plate they must have the same meaning; or asserted, that in every plate they refer to a period of 1040 years, designated in the preceding pages.

The author of the Italian explanation of the Codex Vaticanus No. 3738, has annexed to that of the seventeenth plate some general preliminary observations. In these he states that (in their paintings) the Indians placed the hieroglyphics of five of the days of the month respectively towards the East, the South, the West, and the North, viz.:

On the East, the	1st,*	13th,	5th,	17th, and	9th	days of the	month.
South,	20th,	12th,	4th,	16th, and	8th	do.	do.
West,	7th,	19th,	11th,	3d, and	15th	do.	do.
North,	14th,	6th,	18th,	10th, and	2d	do.	do.

and this arrangement is found in fact in one of the plates in Lord Kingsborough's collection, viz., the 44th, or last plate of the Hungarian manuscript.

An examination of the several manuscripts in the collection will show that these four combinations are found in five of them; the Vaticanus No. 3776, the Borgianus, that of Bologna, that of Archbishop Laud at Oxford, and that of Mr. Fejevary at Pess, in Hungary. The first combination of the 1st, 13th, 5th, 17th, and 9th days occurs thirty-five times; that of the 20th, 12th, 4th, 16th, and 8th, sixteen times; that of the 7th, 19th, 11th, 3d, and 15th, twelve

* Cipactli is not mentioned by name, but necessarily implied.

times; that of the 14th, 6th, 18th, 10th, and 2d, twelve times; and the following table shows the several plates of the manuscripts where these combinations are found.

		Pages.	Total.	
1. 13. 5. 17. 9.	Vaticanus, 3776	65. 72. 87. 88. 89. 90. 91. 92. 93. 94. 95.	11	
	Borgianus	17. 18. 21. 58 (5 times), 66.	9	35 times.
	Bologna	16.	1	
	Laud, Oxford	15. 16. 32.	3	
	Hungary	5. 6. 7. 8. 9. 10 (12. 18) (19. 20).	11	
14. 6. 18. 10. 2.	Vaticanus	65. 73.	2	
	Borgianus	17. 39. 18.	3	
	Bologna	12.	1	12 do.
	Laud, Oxford	13. 14. 28. 31.	4	
	Hungary	4. 12.	2	
7. 19. 11. 3. 15.	Vaticanus	66. 74.	2	
	Borgianus	33. 19. 20.	3	
	Bologna	13.	1	12 do.
	Laud, Oxford	11. 12. 30.	3	
	Hungary	3. 4. 11.	3	
20. 12. 4. 16. 8.	Vaticanus, 3776	66. 75. 96.	3	
	Borgianus	19. 20. 21. 40. 58.	5	
	Bologna	13.	1	16 do.
	Laud, Oxford	9. 10. 29.	3	
	Hungary	2. 3. 8. 11.	4	
			Total 75	

This proves in the first place, that the last mentioned manuscripts are, at least in part, of the same character as the Vaticanus and the Borgianus; and secondly, that it is utterly impossible that either of these combinations should have any reference to a correction of the Mexican year. A comparison of these combinations with the arrangement of the twenty trecenas, in the plates 49 to 56 of the Codex Vaticanus No. 3776, in the plates 1 to 3 of the Codex of Bologna, and in the plates 38 to 31 of the Borgianus, as exhibited in the Table F, seems to point out, if not their object, at least their origin.

The period of 260 days in those three Codices, as exhibited in the table F, presents five lines, each of which embraces

fifty-two days, or four trecenas. The lowest line includes the four first trecenas; the 2d line from the bottom the 5th, 6th, 7th and 8th trecenas; the 3d, 4th, and 5th (or upper) lines include respectively, the 9th, 10th, 11th, and 12th, the 13th, 14th, 15th, and 16th, the 17th, 18th, 19th, and 20th trecenas. Read from bottom to top, there are fifty-two columns of five days each; and each of these fifty-two columns is always one of the four combinations already mentioned, either 1, 13, 5, 17, 9; or 2, 14, 6, 18, 2; or 3, 15, 7, 19, 11; or 4, 16, 8, 20, 12; meaning by these numbers, the 1st, 13th, 5th, &c., days of the month; which in the Codices, are represented by the respective hieroglyphics of those days. The numbers, in each of the four combinations, always follow each other in the same order; but, by making each number of each combination respectively, the first number by turns of the combination, (1, 13, 5, 17, 9; 13, 5, 17, 9, 1; 5, 17, 9, 1, 13, &c.) twenty varieties are obtained. Twelve of these varieties are repeated three times each; and the other eight are repeated twice each; making in all the fifty-two columns. Each of these varieties, and even the same variety in different plates represent very different days. Thus, the variety 1, 13, 5, 17, 9, which is repeated three times, represents in the first instance the 1st, 53d, 105th, 157th, and 217th days of the period of 260 days; in the second, the 21st, 73d, 125th, 177th, and 237th; in the third, the 41st, 93d, 145th, 197th, and 257th days of that period.

In all the three Codices, there are two series of fifty-two hieroglyphics each, one series above and one under the five lines of the hieroglyphics of the days of the month; so that each of the fifty-two columns of five days has two of those hieroglyphics annexed to it, one above and one below. The meaning of those hieroglyphics is not known; but it is clear that they have some relation to the series of days with which they are respectively connected.

In the several instances where these four combinations are

found, as above stated, by themselves and detached from the continuous period of 260 days, it may be that each such combination is an abbreviated mode of expressing the five trecenas comprised in each of the double plates of the Codices above mentioned. For that purpose they should be read, either from right to left, or from left to right, so as to be always twelve and not eight days apart. Thus the first combination of the fifty-eighth plate of the Codex Vaticanus No. 3776, must be read in the following order, viz.: Cuetzpalin, Cozcaquantli, Tochitl, Xochtli and Malinalli, which are respectively the 4th, 16th, 8th, 20th, and 12th days of the month. And this may represent in an abbreviated way five trecenas, viz.: that from the 4th to the 16th day of the month; from the 16th to the 8th day: from the 8th to the 20th; from the 20th to the 12th, and from the 12th to the 4th day of the month. This however is but a conjecture.

In the present state of our knowledge of Mexican Hieroglyphics, it is not possible to ascertain positively, for what special purpose these combinations were inserted in the religious Mexican almanacs. It is most probable that they refer to nativities and judicial astrology; and that some properties in common were ascribed to each of those combinations; so that persons born on either of the five days, or of the five trecenas expressed by those days, were subject to similar influences.*

Several other combinations of the days of the month are found in the manuscripts for which we cannot account. Various indications corroborate the suggestion, that the pages should be read in an order inverse of ours. Such are for instance, in the Borgianus, the plates 26 to 30, which contain a period of ten days commencing clearly with plate 30 and ending with plate 26, and still more conspicuously, the period of eighty days contained in the plates 24, 23 and 22.

* Some further observations tending to confirm that opinion will be found hereafter.

Such are also, in the Codex Vaticanus, the two periods containing each twenty days, and comprised respectively in the plates Nos. 17 to 13 and Nos. 10 to 3.

In some instances, such as the plate No. 1 of the Vaticanus No. 3776, the hieroglyphics of the days are placed in such manner, in reference to the principal figure, as to render it probable, that they designate the influence of those days respectively on the several parts of the body. This is corroborated by the plate No. 75 of the Codex Vaticanus No. 3738. This figure, of a date subsequent to the conquest, is clearly an imitation of those representing the influence of the signs of the Zodiac over the several parts of the body, which to this day adorn some of our European Almanacs; but it must have had some foundation in the known superstitions of the Mexicans. The remarkable coincidence of the Mexican names of their days, with those of the signs of the Zodiac of Thibet, has been brought to light by Baron Alexander de Humboldt. And it may be added that, whilst our European superstitions, from whatever quarter derived, have continued so long to ascribe an influence to the signs of the Zodiac over the destinies of men, the same influence has in Mexico been transferred to the days of the month.

Notwithstanding the great similarity in many respects, of the Hungarian manuscript and of that of Archbishop Laud, with the Borgianus and the Vaticanus No. 3776, there are in that of Hungary, many characters or hieroglyphics which are not found in any of the other Mexican manuscripts. The same observation applies with perhaps still greater force to the other Oxford manuscripts of Bodley, Selden, and to that of Vienna. A few hieroglyphics of the days are found in almost every page of this last Codex. But it contains also much matter apparently graphic, which would seem to refer to other than purely mythological or astrological subjects, and the character of which we have no means of ascertaining.

The identity of the Codex Vaticanus, No. 3738, and of

the Tellerianus (Tellero-Remensis, in the Royal Library of Paris,) has already been stated; and the historical portion of both has been examined in the text. The residue consists of the plates 1 to 90 of the Vaticanus, and of the plates 1 to 13, first part, and plates 1 to 33, second part of the Tellerianus.

This portion of the Vaticanus No. 3738, consists of four parts, viz.:

1. Plates 1 to 16 appear to be altogether mythological, and are not accompanied by the hieroglyphics of the days of the month. This part is altogether wanting in the Codex Tellerianus.

2. Plates 17 to 56 contain the twenty trecenas, or period of 260 days. To this corresponds the second part of the Tellerianus, plates 1 to 33, seven plates being wanting in this mutilated Codex.

3. Plates 57 to 74 refer to the eighteen months of the year. In the corresponding portion of the Tellerianus (first part), the six first months are wanting; the plates 1 to 12 are those of the twelve last months; the plate No. 13 represents the five supplementary days, and is the only plate of the Codex Tellerianus which has not its counterpart in the Vaticanus No. 3738.

4. Plates 75 to 90 are graphic representations of the dresses of the several classes at the time of the Spanish conquest, and of some ceremonies or usages peculiar to the Mexicans. This part is altogether wanting in the Codex Tellerianus; most of the plates certainly, and all of them probably, are modern and not copied from any ancient paintings.

These two manuscripts are the only ones (besides the Vaticanus No. 3776, and the Borgianus,) in which the twenty trecenas are or may be arranged according to their natural order. Each trecena occupies, in both, two plates; the first of which contains the five first, and the other the eight last days of the trecena. As both are compilations made after the conquest, they must be read, as our own writing, from left to

right and from top to bottom. The respective numbers 1 to 13 of the period of 13 days (or trecena) which are not inserted in the Vaticanus 3776, and the Borgianus, are, in the Tellerianus and Vaticanus 3738, annexed to the hieroglyphics of the days of the month.

The Codex Tellerianus is mutilated, and, for this period of 260 days, contains but 33 instead of 40 plates; but these are placed without exception according to their natural order, whilst in the Vaticanus 3738, which is complete, several of the plates have been strangely misplaced. This defect cannot be charged to Mr. Aglio, but to the compilers of the work; for the same defective arrangement occurs in the Italian explanation of that Codex. In order to arrange them according to their natural order, it is only necessary to recollect that the days of the month must follow each other according to their well known and constant order, and to refer to the table showing on which day of the month respectively each trecena begins.

Thus the plate 17 of the Vaticanus 3738, which is the first of the period of 260 days, and therefore of the first trecena, begins with 1 Cipactli, and contains the hieroglyphics of the five first days of the month, viz., 1 Cipactl, 2 Ehecatl, 3 Calli, 4 Cuetzpalin, 5 Cohuatl. The plate which should follow must therefore consist of the eight next ensuing days of the month, viz., 6 Miquiztli, 7 Mazatl, 8 Tochtli, 9 Atl, 10 Itzcuiatli, 11 Ozomatli, 12 Malinalli, 13 Acatl; and it will be found that it is the plate 40 which consists of these days, and not the plate 18, which consists of the days 6 Malinalli, 7 Acatl, 8 Ocelotl, and is in fact the second plate of the third instead of the first trecena. In the same manner, the second trecena must commence with 1 Ocelotl, and its first plate must consist of the five days 1 Ocelotl, 2 Quauhtli, &c., according to their natural order. It is the plate 41 which consists of these days, and not the plate 19, which begins with 1 Xochitl, and is the first plate of the fourth and not of the second trecena.

The following table shows the true order in which the plates of the Vaticanus should be arranged, the corresponding plates of the Tellerianus, and those wanted in this Codex.

Trecenas.	Plates. Vaticanus, 3738.	Tellerianus.	Trecenas.	Plates. Vaticanus, 3738.	Tellerianus.
1st	17	wanted	11th	35	16
	40	1		36	17
2d	41	2	12th	37	18
	22	3		38	19
3d	23	4	13th	39	20
	18	5		42	wanted
4th	19	6	14th	43	wanted
	20	7		44	21
5th	21	8	15th	45	22
	24	9		46	23
6th	25	10	16th	47	24
	26	11		48	25
7th	27	12	17th	49	26
	28	wanted		50	27
8th	29	wanted	18th	51	28
	30	13		52	29
9th	31	14	19th	53	30
	32	wanted		54	31
10th	33	wanted	20th	55	32
	34	15		56	33

That these corrections were proper and necessary, is further and conclusively proved by the fact that, when thus arranged, the mythological figures of the respective trecenas and corresponding plates are the same in the Codex Vaticanus No. 3738, and in the Tellerianus. But, although there may be some exceptions, those figures do not agree with the corresponding mythological figures of the Borgianus, and of the Vaticanus No. 3776.

The two Codices have each an explanation annexed; that of the Vaticanus No. 3738 in the Italian, that of the Tellerianus in the Spanish language; which, though differing in some particulars, are substantially similar. The names of the deities and the literal interpretation of these is the same

in both. But the explanations throw no light on the corresponding portions of the Codex Borgianus and of the Vaticanus No. 3776, and they have hardly any, generally no connection with the paintings to which they refer. They consist almost exclusively, either of Indian traditions, avowedly derived from other sources than the paintings, being introduced by the words "they say," "it is said;" or of dissertations, the general object of which is to assimilate those Indian traditions to the facts and even to the doctrines of the Holy Scriptures. This tendency, which pervades the whole, is most remarkable in the explanation of the sixteen first plates of the Codex Vaticanus. Thus, in that of the first plate, we are told of one *Homeyoca* alias *Hometeuli*, which means, the lord of three dignities or the triune lord (signori trino); the source or origin, and the creator of all (il luogo dove è il creatori del tutto), who, *according to the opinion of many old people*, generated by his word *Cipatenal*, and a woman called *Xumeo*.*

In the explanation of the plate No. 11 of the Vaticanus, we are informed that the god of the Milky Way sent a messenger to a virgin in Tulan, telling her that it was the will of the gods, that she should conceive a son; which she did without having known man. This son was *Quetzalcoatle*, the god of the wind; on which the writer observes that, there may be seen the cunning of the great Adversary who, by a false representation of the Divine mission to the Virgin Mary, deceived those poor people, and made them worship a false God. He adds, that the word *Quetzalcoatle* (green-feathered serpent), means "our dearest son;" that, *as it is said*, he was the first who did invoke the gods, sacrificed to them, made penance in

* We are informed by Gama (Part I. page 96), that *Cipactonal* and his wife *Oxomoco* were great astrologers and the inventors of the *Tonalamatl*, or religious almanac; and he is of opinion that their hieroglyphics are found under the letters E, F, of the great Calendar Stone. According to Oviedo, the two great deities of the Toltec colony of Nicaragua were named *Famagoztad* and *Zipaltonal*. As to *Hometeuli*, meaning "triune Lord," the numeral three, in Mexican, is *Yey*; and *Ome* is the numeral two.

order to appease them, and to expiate the sins of man; and that he sacrificed even himself, drawing his own blood with a thorn. The principal subject, however, to which the Scriptural allusions refer, is the history of Eve, before and after the original sin. And it may be added, that the commentator has found in the Indian paintings, even the Limbo, where, as he says, the Catholic doctors place the souls of harmless children.

Baron de Humboldt has published, under the designation of Epochs of Nature, the four most interesting plates of this first series, viz., Nos. 7, 8, 9, 10, which refer to the fable of the four ages of the sun. There is probably here a mistake in the arrangement of the plates. The universal tradition is, that the last destruction of the world was occasioned by water, when, according to the fable, men were changed into fishes. The seventh plate which represents that event, should therefore be the last instead of the first; and the tenth plate which represents the destruction by famine, should be the first instead of the last of the series. The time which each age lasted, is expressed by characters which may be interpreted either as the hieroglyphic of the numeral 400, or as that of the cycle, and by circles which designate units. According to the first interpretation, the first age lasted 5206 years, the second 2010, the third 4004, and the fourth 4008. According to the second interpretation, the duration of the four ages would have been respectively 682, 530, 576, and 528 years; according to Gama, 676, 364, 312, and 52 years; in all either 15,228, 2316, or 1404 years for the duration of the world before the flood.

It has already been seen, that an incidental observation of the author of the Italian interpretation of the Vaticanus 3738 has thrown considerable light on the origin of the four singular combinations, consisting each of five certain days of the month, which occur so often in six of the Codices. Another fact has been elicited, by the aid of the Indian names of some hieroglyphics, as given by the same author.

In the four Codices which contain the twenty trecenas of the period of 260 days, according to their natural order,* the hieroglyphics of the days of the month occupy only the margin of the several plates, the interior or main part of the said plates consisting of one or more graphic representations, or mythological figures. But, in the Codex Vaticanus No. 3738, and in the Tellerianus, there is in the margin, adjacent to the hieroglyphics of the days of the month, another series of hieroglyphics consisting of human heads, (one for each day of the month,) of no very marked character, but which may still be distinguished one from the other. And either of the designations *b*, *c*, *in*, in the Vaticanus; *b*, *m*, *in*, in the Tellerianus, are annexed to each hieroglyphic of this series. The names of these hieroglyphics are given in the Italian explanation of the 17th and 40th plates of the Codex Vaticanus No. 3738, which, as above stated, follow each other and constitute the first trecena. The signification of the letters *b*, *c*, *in*, is also given, viz., bueno, cattivo, indifferent; good, bad, indifferent; to which correspond in Spanish, the *b*, *m*, (malo) and *in* of the Tellerianus. In the following representation of those two plates (17 and 40) of the Vaticanus 3738, the names of the hieroglyphics of those two parallel series are substituted for the hieroglyphics themselves; and it appears that this new series consists only of nine signs, the 10th, 11th, 12th, and 13th, being the same as the 1st, 2d, 3d, and 4th, viz., Xiuhteotl, Ytztli, Piltzinteotl, and Tzinteotl. The same series of nine figures or hieroglyphics is repeated throughout the whole period of 260 days, both in the Vaticanus 3738, and in the Tellerianus, which correspond in every respect throughout the whole, save only the plates wanting in the Tellerianus. The names of the hieroglyphics of the series of nine signs are set down in italics in the table. The other names are those of the hieroglyphics of the days of the month.

* Viz., the plates 29 to 48 of the Vaticanus 3776; plates 45 to 54 of the Borgianus; plates 17 to 56 of the Vaticanus 3738; and plates 1 to 33 of the second part of the mutilated Tellerianus.

First trecenna.	Vaticanus No. 3738.	Telleria-nus.
Plate 17	b c b in c *Xiuhtetl, Ytztle, Piltzinteotl, Tzinteotl, Mictlanteotl* 1 Cipactli, 2 Ehecatl, 3 Calli, 4 Cuetzpalin, 5 Cohuatl	Plate wanting
Plate 40	in e b in b *Chalchiutlicue, Tlazolteotl, Tepeyolotl, Tlaloc, Xiuhteoctli* 6 Miquiztli, 7 Mazatl, 8 Tochtli, 9 Atl, 10 Itzcuintli c *Ytztli* 11 Ozomatli b *Tiltzinteoctli* 12 Malinalli in *Tzinteotl* 13 Acatl	Plate 1, 2d part

On examination, it was found that the names thus given by the Italian interpreter to the several hieroglyphics of this series of nine signs were precisely the same as those given by Boturini to the nine Lords of the Night, or nocturnal signs, and differing only in two instances from the names given by Gama to the said signs. The interpretation of those names as given by both is inserted in the following comparative table: the termination *yohua* (yohualli) of Boturini means "night;" *teuctli, teuc, teutl, teotl*, "Lord," "God."

Signs.	Gama, page 31.	Boturini, page 58.	Vaticanus 3738.*	Table C.
1	Xiuhteuctli, Tletl Lord of the year, fire	Xiuhteuc-yohua Lord of the year	Xiuhteutl	a
2	Teepatl Flint, silex	Ytzteuc-yohua Lord of the fire	Ytztle	b
3	Xochitl Flower	Piltzinteuc-yohua Lord of children	Piltzintzinteotl	c
4	Cinteotl Goddess of maize	Cinteuc-yohua Lord of maize	Tzinteotl	d
5	Miquiztli Death	Mictlanteuc-yohua Lord of hell	Mictlanteotl	e
6	Atl Water, represented by the symbol of the goddess *Chalchiuhcueye*	Chalchihuitlicue-yohua Lord of water	Chalchiutlicue	f
7	Tlazolteotl Goddess of love	Tlazol-yohua Lord of dishonest love	Tlazolteotl	g
8	Tepeyolotli A goddess in the middle of the mountains	Tepeyolo-yohua Lord of the interior of the mountains	Tepeyolotl	h
9	Quiahuitl Rain, represented by the symbol of the god *Tlaloc*, to whom it was ascribed	Quiauhteuc-yohua Lord of rain	Tlaloc	i

* Italian interpretation of plates 17–40.

The names given by Gama and their interpretation are substantially the same as those of Boturini and of the Codex Vaticanus 3738, except in the 2d and 3d signs: *Tecpatl* and *Xochitl*, according to Gama; *Ytzteuc* and *Piltzinteuc*, according to Boturini, who interprets *Ytztzuc*, (Vatic. *Ytetli*) "lord of the fire." The etymology of *Ytz*, or *Ytzt* as meaning "fire," cannot be discovered. *Yztac* means white; and *Ytztic* means cold. The etymology of *Piltzinteuc* seems correct;* and *Piltzinteuhtli* is found in Gama's Calendar as one of the deities which govern three of the trecenas. Gama seems to have supposed that there were two distinct series of nine signs, one, which is his, that was used for the purpose of distinguishing the days of the five last from those of the five first months of the year; and another, connected with some of the superstitions of the Mexicans, which Boturini confounded with the first. Seven of the signs are common to both Gama's series, and that of the Vaticanus 3738. And it is far more probable that either Gama, or the compilers of the Vaticanus should have mistaken two of the signs, than that there should have been two distinct series of nine signs, seven of which were common to both.

It is clear, at all events, that these nine signs were not introduced in the period of 260 days, in order to distinguish the several days, since the combination of the numbers 1 to 13 of the period of thirteen days with the 20 hieroglyphics of the days of the month was sufficient for that purpose. The fact that this series of nine signs was connected with the period of 260 days, of which the Codex of Bologna affords an additional proof, corroborates the opinion heretofore expressed, that the reason, why a series of nine terms was used to distinguish the 100 last days of the solar year of 360 days, when one of three terms would have been sufficient, was, that

* Yet Parades (Grammar, p. 20) observes: "Cuidado, no se equivoque *nopiltzin*, mi hijo, with *nopiltzintzin*, que significa *Señor*.

this series of nine had already been introduced by the priests or astrologers in their sacred period.

The form of the hieroglyphics throws no light on the subject. Five of the signs according to Gama, three according to Boturini, (5th, 6th, and 9th, Death, Water, and Rain) have the same meaning as certain days of the month. But the hieroglyphics of those signs, as they appear in the Codex Tellerianus, and in the Vaticanus 3738, are only human heads, and bear no resemblance to the well known hieroglyphics of the days of the month which have the same meaning.

I have not been able to discover any trace of that series of nine signs, or, as they may be properly called, of the Lords of the Night, in any part of the Codex Vaticanus No. 3776, of the Borgianus, or of any other of the Paintings in Lord Kingsborough's collection, (besides the aforesaid Vaticanus 3738, and Tellerianus,) except in the Codex of Bologna, where it is found in the plates 1 to 8, which, in the arrangement of the trecenas, correspond with the plates 49 to 56 of the Vaticanus 3776, and with the plates 38 to 31 of the Borgianus. These eight plates of the Bologna Codex should be considered as forming but one, and having, exclusively of the series of nine signs, the following appearance, which would also be that of the plates 49 to 56 of the Vaticanus 3776, if arranged in a similar parallel line.

PLATES 1 AND 2. 3 AND 4. 5 AND 6. 7 AND 8.

A series of hieroglyphics not understood.

Trecenas.	Days of the month.	Trecenas.	Days of the month.	Trecenas.	Days of the month.	Trecenas.	Days of the month.
17th	Atl to Cipactli 9th d. 1st d.	18th	Ehecatl to Ocelotl 2d d. 14th d.	19th	Quauhtli to Mazatl 15th d. 7th d.	20th	Tochtli to Xochitl 8th d. 20th d.
13th	Ollin to Atl 17th d. 9th d.	14th	Itzcuintli to Ehecatl 10th d. 2d d.	15th	Calli to Quauhtli 3d d. 15th d.	16th	Cozcaquauhtli to Tochtli 16th d. 8th d.
9th	Cohuatl to Ollin 5th d. 17th d.	10th	Tecpatl to Itzcuintli 18th d. 10th d.	11th	Ozomatli to Calli 11th d. 3d d.	12th	Cuetzpalin to Cozcaquauhtli 4th d. 16th d.
5th	Acatl to Cohuatl 13th d. 5th d.	6th	Miquiztli to Tecpatl 6th d. 18th d.	7th	Quiahuitl to Ozomatli 19th d. 11th d.	8th	Malinalli to Cuetzpalin 12th d. 4th d.
1st	Cipactli to Acatl 1st d. 13th d.	2d	Ocelotl to Miquiztli 14th d. 6th d.	3d	Mazatl to Quiahuitl 7th d. 19th d.	4th	Xochitl to Malinalli 20th d. 12th d.

A series of hieroglyphics not understood.

But, besides the two series at top and bottom of hieroglyphics not understood, and besides those of the days of the month, there is, in the Codex of Bologna, another series consisting of a hieroglyphic annexed to, and preceding every one of the hieroglyphics of the days of the month: which series is not found in the corresponding plates of either the Vaticanus 3776, or the Borgianus. And this series consists also of nine signs regularly recurring through the whole period of 260 days. These hieroglyphics have generally the same character as those of the series of nine signs of the Vaticanus 3738, and of the Tellerianus, without being however perfectly similar.

It is proper here to observe that the hieroglyphics of the several days of the month, though preserving a general resemblance, are not precisely the same in the several painted manuscripts of Lord Kingsborough's collection. It appears that much latitude was in that respect left to the fancy of the writers; and it is probable that similar variations occur in other hieroglyphics. These variations occur sometimes in the same manuscript: and it also often happens, that two or three different days are designated, in the same manuscript, by hieroglyphics so similar, that they can be distinguished only by their position.

It has already been stated, that the hieroglyphics of the signs of the series of the nine Lords of the Night have not, in the Codex Tellerianus and in the Vaticanus 3738, any resemblance to the hieroglyphics of the days of the month of the same name; and the observation applies as well to the hieroglyphics of *Atl* (water), *Quiahuitl* (rain), *Miquiztli* (death), as to the 2d and 3d signs, on which Gama differs from Boturini and the two Codices, viz., *Tecpatl* (silex) and *Xochitl* (flower) by Gama, *Ytztli* (lord of fire) and *Piltzinteuc* (lord of children) according to Boturini and the two Codices. This is also generally true of the hieroglyphics of the series of nine signs in the Codex of Bologna; but there

are two exceptions, which show conclusively that this series in the last mentioned Codex is identic with that of the nine Lords of the Night inthe Tellerianus and the Vaticanus 3738, and which also render it very probable that the names given by Gama are correct.

The exceptions occur in the 2d and 5th signs of the said series of nine. The second (*Tecpatl* according to Gama) is represented in the Codex of Bologna by the hieroglyphic of the day *Tecpatl*; and the fifth, *Miquiztli* is represented, as the day of the same name always is, by a death's head. But it must be observed that *Tecpatl*, which, in the first trecena and as united to the day Ehecatl, is in the Bologna Codex represented by the ordinary hieroglyphic of that day, is afterwards represented in that Codex, through the whole period of 260 days, as a little black boy whose head is indeed the hieroglyphic of the day Tecpatl. These two hieroglyphics, *Tecpatl* and *Miquiztli*, are always, through the whole period, placed in their proper order, as the 2d and 5th signs of the series of nine; which though all the other signs may not be always so easily distinguished, leaves no doubt respecting the identity of that series in the Bologna Codex, with that of the two Codices, and with Gama's or Boturini's series of the nine Lords of the Night. The fact that the 2d sign is *Tecpatl* in that Codex, corroborates Gama's designation: to which may be added, that Sahagun (Book 2d, 10th month) calls the god of fire, *Xintzcutli*, as Gama does, and not *Ytzteuc*, as Boturini's 2d sign.

The manner in which the two series of the days of the month, and of the nine companions or accompanying Lords of the Night, are exhibited in the Codex of Bologna, will be sufficiently explained by the following representation of the twenty first days, viz., the first trecena, or period of 13 days, which begins with the first day of the month, *Cipactli*, and ends with the 13th day, *Acatl*, and the seven first days of the second trecena.

The nine signs.	The days of the month.	The nine signs.	The days of the month.	The nine signs.	The days of the month.	The nine signs.	The days of the month.
a Xiuhteuctli..	1 Cipactli	b Tecpatl.....	2 Ehecatl	c Xochitl.....	3 Calli	d Cinteotl..	4 Cuetzpalin
e Miquiztli....	5 Cohuatl	f Atl.....	6 Miquiztli	g Tlazolteotl..	7 Mazatl	h Tepeyolotl..	8 Tochtli
i Quiahuitl...	9 Atl	a Xiuhteuctli..	10 Itzcuintli	b Tecpatl.....	11 Ozomatli	c Xochitl....	12 Malinalli
d Cinteotl.....	13 Acatl	e Miquiztli....	14 Ocelotl	f Atl.....	15 Quauhtli	g Tlazolteotl	16 Coxcaquauhtli
h Tepeyolotl..	17 Ollin	i Quiahuitl...	18 Tecpatl	a Xiuhteuctli..	Quiahuitl	b Tecpatl....	20 Xochitl

The lines to be read from top to bottom, and each line from left to right. But it must be observed that, in the original Codex, the hieroglyphics of the four first trecenas form one continuous line, which is at the bottom of the plates 1 to 8; (each of the four other lines of the said plates containing also four trecenas,) and that neither the numbers 1 to 20 of the month, nor the letters a, b, c, d, e, f, g, h, i, which, in the above table are annexed to the signs of the series of nine, appear in this Codex.* Nor is there in it, as in the Tellerianus and Vaticanus 3738, any letter, or any thing designating fortunate or unlucky days. But if the Italian interpretation of the last mentioned Codex is correct in that respect; if the letters *b, c, in* (*b, m, in*, in the Tellerianus), affixed respectively to the hieroglyphics of the Lords of the Night, indicate such days as are fortunate, unlucky, or indifferent; it may be fairly inferred that the same distinction applies to the corresponding hieroglyphics of the series of nine signs in the Codex of Bologna.

It is clear that those letters which distinguish fortunate and unlucky days in the Vaticanus 3738, and in the Tellerianus, being European characters, have been inserted by the European compilers of those Codices. It is probable that, if that distinction had been represented in the original paintings by certain hieroglyphics, these would have been preserved by

* See Table F.

the compilers; and therefore that it was derived from oral tradition and not from ancient paintings. The days of the period of 260 days are, according to that interpretation, divided into three equal classes: 87 fortunate, 87 unlucky, and 86 indifferent. Whether a similar distinction was made in the *Tonalamatl* is not known. Gama does not allude to it in his calendar or almanac; but it is found in that of Yucatan, communicated by Don J. P. Perez to Mr. Stephens, with this twofold difference, that there are no indifferent days in the Yucatan almanac, and that the number of unlucky is much greater than that of fortunate days: viz., in the period of 260 days, 170 unlucky and 90 fortunate; in the year of 360 days, 235 unlucky and 125 fortunate.*

A distinction may, and perhaps should in this instance be made, between those fortunate and unlucky days which were favorable or the reverse, for doing any kind or some particular species of business; and nativities, or the influence which the days (or combinations of days), on which men were born, had on their subsequent destinies. The days distinguished by the hieroglyphics of the Lords of the Night connected with them, seem to belong to the first class; and the double series of fifty-two undecyphered hieroglyphics placed above and under the five lines of the hieroglyphics of the days, in the Codex of Bologna, the Borgianus, and the Vaticanus 3776, may refer to nativities. It is indeed difficult to conceive any other object for which those hieroglyphics could have been

* Don J. P. Perez says that this agrees with three ancient almanacs which he has examined. But he adds, that he has found it laid down as a rule in another place, that six days in each month of 20 days, viz., the 2d, 3d, 7th, 12th, 17th, and 20th, are days of rest; which to him seems probable, as he sees no reason why there should be so great an excess of days of ill fortune. (Stephens's Travels in Yucatan, Appendix, Vol. I. p. 448.) A singular feature in this Yucatan Calendar is, that three of the supplementary days, viz., the 1st, 4th, and 5th, are designated as fortunate. (Ut supra, page 458.) It is well known that these five days, and especially the last, were considered by the Mexicans as the most unfortunate of the whole year. Observe that they make no part of the period of 260 days.

intended. They do not consist, as the series of the nine Lords of the Night, of a succession of signs repeated at regular intervals; but, though there may be some exceptions, appear to be so many distinct and different symbols. There are in the Bologna Codex, but few representations of human figures, of animals, or other material objects; and they cannot be considered as representing deities, with their respective attributes. It seems that they must necessarily express certain special properties of each of the fifty-two combinations of the days of the month with which each of the fifty-two pairs of hieroglyphics (above and under) is respectively connected; and nothing seems more probable, than that each pair should indicate the destinies of the men born on any of the five days connected with it.

The apparent character of these 104 hieroglyphics is much more arbitrary and symbolic than graphic. They differ materially in that respect from those of the days, of cities, and of names, which are generally derived from and abbreviated representations of material objects. The apparent character of this series of hieroglyphics, their number, and the nature of the ideas which they were probably intended to express, seem to indicate a more perfect system of writing than was disclosed by those hieroglyphics, the meaning of which is known to us.

A different general rule is given by Sahagun, in his fourth book, for distinguishing fortunate and unlucky days, in reference either to those days as such, or to nativities. He had a special aversion to the religious period of 260 days, which he seems to think to have been exclusively used for astrological purposes. His fourth book, which is entitled "Mexican Judicial Astrology, or, Divinatory Art," is a regular statement of the twenty trecenas or periods of thirteen days which constitute the period of 260 days, in which the fortunate and unlucky days or nativities are designated, and some miscellaneous details inserted. There are some mistakes in the names

of the days, so conspicuous that they can hardly be ascribed to him, and which may easily be corrected by attending to the constant and well-known order of the days of the month.* His general rule is, that the 2d, 4th, 5th, 6th, 8th, and 9th days of every trecena are generally unfortunate, and that the 3d, 7th, 10th, 11th, 12th, and 13th days are generally fortunate. The first day varies, and Sahagun appears to think that the Mexican astrologers ascribed to it some general influence over the whole trecena. It is evident that his general rule contradicts that derived from the nine Lords of the Night, which is indicated by the interpreters of the Codex Tellerianus and of the Vaticanus 3738. These interpreters moreover frequently, and Sahagun occasionally, assign the character of fortunate or unfortunate, to several special days, without regard to their own general rules. These two Codices and Sahagun's work are nearly of the same date; and it is extremely probable that the designations of the days deemed fortunate or unfortunate, were in both cases derived from oral, traditional, and contradictory information, obtained from the Indians.

An accurate knowledge of the system of nativities, invented by the Mexican astrologers, would in itself be very useless, unless it should aid in deciphering some hieroglyphics. But there are some interesting observations in Sahagun's ac-

* The two principal mistakes consist in having designated the day *Ceacatl* (1 Acatl) instead of *Cehecatl* (1 Ehecatl) as the first day of the 18th trecena, and the day *Cexuchitl* (1 Xuchitl) instead of *Cetochtli* (1 Tochtli) as the first day of the 20th trecena. That these mistakes are evident and must be those of a transcriber, is proved by the names of the next ensuing days as stated by Sahagun himself. Thus, for instance, immediately after saying that the first sign of the 20th trecena is 1 *Xuchitl*, the next ensuing days are stated to be, *Umecatl, Eyetzcuintli, Naviocumatl, Macuiltimalinalli, Chicuacenacatl*, &c. (2 Atl, 3 Itzcuintli, 4 Ozomatli, 5 Malinalli, 6 Acatl, &c.); which days follow *Tochtli* and not *Xuchitl*. It is the same with the days of the 18th trecena. The other mistakes consist principally in giving occasionally to the day *Ehecatl* the names *Acatl* and *Ecatl*, spelling *Mazatl, Macatl*, transposing some names, &c.; all of which may be corrected by attending to the constant order of the days of the month.

count. It appears that the nativity, or the influence of the days of birth on the destinies of man was not decisive, and indicated only a propensity; that the advantages of a fortunate birth might be lost by neglect, and the fatal consequences of an unlucky nativity be prevented by due care. In both cases, penance and the observance of certain religious rites are the principal remedy, and were of course used by the priests as an instrument of power. But the principles of morality are still kept in view; and the doctrine is, in several instances, inculcated, that the benefits of a fortunate birth may be forfeited by the indulgence of some sensual passion, and that an unfortunate propensity may be conquered by great attention and strenuous efforts.

Sahagun, as most men of his age, believed in horoscopes, and in the influence of constellations and planets, though he qualifies it by saying, that it only produces an inclination, "*y que ningun poder tiene sobre el libre alvedrio.*" But he adds that the judicial astrology of the Mexicans is not founded on the stars, or on any natural cause. Whence he concludes that this system was an invention of the demon.

It is, however, evident, from the Codices Vaticanus 3738 and Tellerianus, as well as from Gama's Calendar, that each of the trecenas, or periods of thirteen days, was governed by one or more deities, who had an influence on the nativities of the trecena. It further appears by Gama's Almanac, which was extracted from the *Tonalamatl*, or authentic religious Calendar, that many if not most of these deities were identic with some star or celestial body, or that the star was dedicated to the deity. Boturini has also given (pp. 65–67) the names of the Mexican celestial signs. These amount to twenty, of which fifteen, though not placed as he acknowledges in their proper order, are identic with the names of the deities which, according to Gama,* preside over fifteen of the trecenas. It seems there-

* Viz., the names of Boturini's celestial signs Nos. 20, 1, 2, 3, 12, 6, 11, 14, 7, 15, 5, 8, 16, 4, 10, 9, respectively agree with those of the deities which

fore certain that, though blended with the signs of the days, the Mexican judicial astrology was, to a certain extent, connected with the celestial bodies, and did not differ so essentially from that of the Europeans as Sahagun had supposed.

In attempting to ascertain the names, attributes, and influence of those governing deities, the same contradictions are found, as in other cases, in the several authorities. And notwithstanding the aid derived from the interpretation of the Codices Tellerianus and Vaticanus 3738, from Gama's Calendar, and from Sahagun's voluminous work, it must be extremely difficult, if at all possible, to discover the names and attributes of the mythological figures of the plates 29 to 48 of the Codex Vaticanus No. 3776, and of the plates 45 to 54 of the Codex Borgianus, of which we have no interpretation.

The difficulty is greatly increased by the Mexican variations in the representation of their deities. On the one hand, they were painted in different ways according to their various attributes and names: and the priests were also in the habit of connecting with the statue of a god or goddess, symbols of other deities which partook of a similar character. Gama has adduced several instances of both practices, in the part of his dissertation which relates to the statue of the goddess of death, found buried in the great Square of Mexico, of which he and lately Mr. Nebel have given copies.

Her name is *Teoyaomiqui*, which means, to die in sacred war, "or in defence of the gods;" and she is the proper companion of *Huitzilopochtli*, the god of war. The symbols of her own attributes are found in the upper part of the statue: but those from the waist downwards relate to

preside over the trecenas 1, 2, 3, 4, 5, 6, 9, 10, 12, 13, 14, 15, 16, 18, 19, 20, according to Gama.

other deities connected with her or with *Huitzilopochtli*. The serpents are the symbols of his mother *Cohuatlycue*, and also of *Cihuacohuatl*, the serpent woman who begat twins, male and female, from which mankind proceeded:* the same serpents and feathers are the symbol of *Quezatlcohuatl*; the precious stones designate *Chalchihuitlycue*, the goddess of water; the teeth and claws refer to *Tlaloc* and to *Tlatocaocelotl* (the tiger king): and, together with her own attributes, the whole is a most horrid figure.

The god *Tetzcatlipoca*, when worshipped under the name of *Techpotli*, is represented as a handsome youth; when in his own proper name, he is painted much deformed; he becomes horrific under the name of *Necocyaotl* (cruel enemy). The original statue of *Huitzilopochtli* was gigantic and adorned with precious stones forming flowers, birds, &c. In his character of *Tetzauhteotl*, as he first appeared at his birth and avenged his mother's death, he becomes the "terrific god." And he is again painted in a different way when appearing as *Teoyaotlatohua* (director of the war), in which last character he is always united with *Teoyaomiqui*.†

The recovery of the painted ritual, called Tonalamatl, which was in Gama's possession and to which he perpetually alludes, would, with the explanations given in his Calendar, probably give the interpretation of many of the mythological figures of the Codex Borgianus and other similar painted manuscripts. And a minute comparison of these with the figures of the Codex Vaticanus 3738, and the description

* Hence twins are called in Mexican, *Cocohua*, plural of *Cohuatl*.

† The Mexican astrologers made of that goddess a constellation which presided over the 15th trecena. She is there painted naked; and *Teoyaotlatohua-Huitzilopochotli* is there also represented under a much less deformed appearance than when on earth. Between them is a flowering tree, broken or cut, and a bird with his head cut off, &c. (Gama ut supra). Compare with the application of this painting to the original sin, plucking roses, in the interpreter's version, 15th trecena.

of deities by Sahagun, Gama, and other writers, may lead to the discovery of some analogies. In the mean while, the annexed very abridged view of the Italian and Spanish interpretations of the figures representing the deities which according to them respectively preside over the several trecenas of the period of 260 days, compared with those of the Tonalamatl in Gama's Calendar, will show how discordant they are. Gama's authority, sustained in that respect by Boturini, is much more weighty than the conjectures of the interpreters.

Deities which presided over the respective Twenty Trecenas of Thirteen Days each, making the Period of 260 Days:

Trecenas.	*Plates.* Vat.	Tel.	*According to the Interpreters of the Codices Vaticanus 3738, and Tellerianus.*	*According to Gama.*
First	17		Tonacatlecotle. Lord of our bodies; he created the world. Painted with a crown. No sacrifices to him. Called also *Citallanotli*, which, it is said, means, Milky Way; according to some, the name of the first man.	The united signs 1 *Cipactli* and *Ehecatl*, named *Quetzalcohuatl*, preside, accompanied by *Atl*, or *Chalchiuhcueye*.
	40	1	Tonacacigua, alias *Tuchiquetzal* (plucking rose), and *Chicomecouatl* (seven serpents); wife of *Tonacatlecotle;* the cause of sterility, famine, and miseries of life.	(This last is the symbol of water or rain, according to Boturini and Sahagun.)
Second	41	2	Quezalcoatl. Begotten by the breath of God; born of a virgin without connection with man; therefore lord of the air. Called in heaven, *Chalchihuitzli*. He created the world and the first man. The only god with a human body; all other gods incorporeal. Also, one of the seven saved from the flood; the first who built temples; effected reformation of the world by doing penance. Inventor of sacrifices by human blood, men piercing their tongues, ears, &c. After him, human sacrifices were introduced.	The planet *Titlacahuan*, also named *Tezcatlipoca*.
	22	3		

Trecenas.	*Plates.* Vat.	Tel.	*Accord. to Interpret. of Cod. Vatic. 3738, and Tellerianus.*	*According to Gama.*
Third	23	4	Tepeyolotl (also called *Tesciulutli*), means, inside of mountain, or echo. Sacrifices said to be of filth. Four days in honor of *Suchiquezal*, who made the earth flourish.	The same *Tezcatlipoca* accompanied by *Tlatocaocelotl*, or, according to C. del Castillo, by *Teotlamacazqui Iztlacatini.*
	18	5	This nameless figure (holding a child by the hair) means, human sacrifices introduced after disappearance of *Quezalcoatl.*	(According to Boturini, *Tlatoca Ocelotl* is the tiger king; and *Teotlamatazqui*, the god of the priests.)
Fourth	19	6	Quequecoyotl, means, old fox. Worshipped by Ottomies under name of *Tatacoada*. Feast of discord; four days fast in honor of *Quezalcoatl* of Tula, named first *Calcoate*, also 1 Acatl, which is the star Venus.	*Macuilxochitl* (5 Xochitl), or, *Macuilxochiquetzalli.* (The goddess of marriage, according to Boturini.)
	20	7	Isnextli. A woman blind with ashes, looks backwards. This is Eve weeping, cannot look at heaven, holds a rose, emblematic of her sin, plucking up a forbidden rose. (Satan is still counterfeiting the Scriptures.)	
Fifth	21	8	Chalchiutlicue. Female dressed with precious stones. Saved from the flood. Holds spinning-wheel and weaver's comb.	*Atl*, or *Chalchiuhcueye* accompanied by the planet *Tlazolteotl*, or, according to others, by *Ehecatl Quetzalcohuatl.*
	24	9	Tlazolteotl. Goddess of love; a head without eyes. This alludes to the introduction of first sin.	(*Tlatzolteotl*, goddess of dishonest love, according to Boturini. Of carnal love, by Sahagun, who calls her *Tlaculteutl*, and says that she is also called *Ixcuina.*)

Sixth	25	10	Naolin (or *Tonatiuh*). Sun in his motions. Author of common things.	*Piltzinteuhtli* and *Tezauhteotl.*
	26	11	Meztli (or *Teczistecatl*). Moon; the cause of generation. Opposite the sun. A sea snail.	P. god of children T. terrific god } Boturini.
Seventh	27	12	Nauiehecatl (4 *Ehecatl*). Worshipped by merchants; holds a serpent.	*Huey Tlalloc*, accompanied by *Xopancallehuey-tlalloc.*
	28		Tlaloc, companion of 4 *Ehecatl.* Believed to bring fair weather.	
Eighth	29		Mayaguil. The woman with 400 breasts; converted by gods into Maguey (also called *Cipaquetona* in the 11th trecena).	The sign *Ometochtli* (2 Tochtli), accompanied by *Meichpochtli* and *Xochimeichpochtli.*
	30	13	Tzinteotl (or Cinteotl), sprang from *Mayaguil;* the origin of gods; means abundance, satiety caused by wine.	
Ninth	31	14	Tlavizcalpantecutli. God of Aurora, or morning and evening. The first light in the world, before the sun (*Civahteltonah*). The star Venus; and this Venus is *Quezalcohuatl.*	*Quetzalcohuatl* and *Quetzalmalin.*
	32		Xiuatlatl.	
Tenth	33		Tonatiuh. Substance of the sun. Illuminates the earth under his feet. Sits opposite the god of hell; leads to heaven those killed in battle.	*Mitlanteuhtli* and *Teotlamacazqui.*

Trecenas.	*Plates.* Vat.	Tel.	*Accord. to Interpret. of Cod. Vatic. 3738, and Telleriamus.*	*According to Gama.*
	34	15	Miquitlantecotli (those dead of misery). The god of hell. He and the god of heaven alone crowned with the crown called *Altoncatecoatl.* This crown used after the conquest by Indian chiefs, and seen, during the war of Coatlan, by Father Peter de los Rios, who copied these paintings.	(*Mictlanteuctli.* God of dead. Of hell, according to Boturini.)
Eleventh	35	16	Patecatl, husband of *Mayaguil*, or, *Cipaquetona*, who was saved from the flood. He is the god of wine; originally the root used to make the Maguey ferment.	*Tonatiuh*, accompanied by *Tlatoca Ocelotl* and *Tlatoca Xolotl* (or, according to Castillo, by *Tepoztecatl.*)
	36	17	Quauhtli and Ocelotl (eagle and tiger). Sons of the preceding pair; inebriated, ferocious, valiant.	
Twelfth	37	18	Yztlacoliuhqui; means lord of sin and blindness. The god of frost. He committed sin in a place of happiness. Adam after sin. A southern star, retrograde, portentous of war.	*Teonexquimilli Tlazolteotl*, accompanied by *Tlalteuhtli* (*Teotlaconexquimilli*, symbol of obscurity; *Tlaltenktli*, the punisher of adulterers; according to Boturini.)
	38	19	The figures represent adulterous women put to death before the image of that deity.	
Thirteenth	39	20	Yxcuina, wife of *Miquitlantecotli.* Profligate, goddess of immodesty, adultery, dirt, and salt. Painted face with two colours. Same as *Tlazolteotl?* The woman who sinned before the flood.	*Teoiztactlachpanqui* and *Quetzalhuexoloquauhtli* were the stars which influenced this thirteenth trecena.

	42		Tezcatlipoca; painted with feet of man, claws of cock, bird's wings, sings, oh, oh. Deceived the first woman who committed sin, therefore placed next to the goddess of pollution. (This proves that the interpreter knew that this plate 42 was next to plate 39.)	(According to Boturini, the first, *T*, cleans the salt pits of the gods, viz. moderates their anger; the second, *Q*, means, an eaglelike peacock.)
Fourteenth	43		Thipetotec, made penance with *Quezalcoatl* A god of the Tzapotecas, who, at his feast, dressed themselves, as he had done, with the skins of men slain in war.	*Nahui Ollin Tonatiuh*, accompanied by *Chicuey Malinalli* and *Piltzinteuhtli*, according to the Tonalamatl. *Piltzinteuhtli* and *Quetzalcohuatl*, according to Castillo.
	44	21	Quezalcoatl. A feast of great fear; therefore paint a serpent swallowing a man.	
Fifteenth	45	22	Yxpapalotl. Knife of flints (or razors). God of butterflies. Painted with eagle's feet, which alone are seen when he appears. Whilst pulling roses, the tree broke and shed blood. Whereupon driven from heaven by *Tonacateuhtli* and wife (Nos. 17th and 40th plates). Before sin, called *Xomunco*. Driven from heaven along with *Quecalcoatl*, *Tezcatlipoca*, *Oaleteotl*, &c., sons of *Citlaliuce* and *Citlalatona*.	*Teoyaotlatohua Huitzilopochtli*, accompanied by *Teoyaomiqui*. (This last is the goddess of the dead, or, according to Boturini, of the souls of the dead. Her statue disinterred, painted by Gama and by Mr. Nebel.)
	46	23	Xuchitlycacan or *Tamoancha*. The place where they transgressed by pulling roses (or descended afterwards). A feast of fear rather than of love.	
Sixteenth	47	24	Xolotl. God of monsters, of twins, of joint things. One of the seven who escaped from the flood.	*Ollin Tonatiuh*, *Tlaloc* and *Citlalinycue*, or *Citlalcueye*.

Trecenas.	*Plates.* Vat.	Tel.	*Accord. to Interpret. of Cod. Vatic. 3738, and Tellerianus.*	*According to Gama.*
	48	25	Tlaclitonatio. Crepuscule. Represented by a man with sun on his shoulder, darkness and death under his feet. Means rays of sun between light and darkness. When sun sets, it gives light to the dead.	(This last is the Milky Way, according to Boturini.)
Seventeenth	49	26	Chalchiuhtototli; means, mirror emitting smoke. Same as *Tezcatlipoca.* His claw feet alone are seen when he appears.	*Ahuilteotl*, accompanied by *Quetzalhuexoloquauhtli.*
	50	27	No name. Represents human sacrifices.	
Eighteenth	51	2 8	Cantico or *Cuaxolotl.* Having sacrificed after having eat fried fish, he was changed into a dog, in punishment of not having kept fast till after sacrifice. His then invoking *Miquillatecotli*, his audacity caused the destruction of the world.	*Piltzinteuhtli* and *Tlazolteotl*, according to the Tonalamatl. *Xochiquetzal*, *Tlazolteotl*, and *Tlalloc Quiahuitl*, according to Castillo.
	52	29	Quetzalcoatl sits in glory, opposite *Cantico*, in honor of his penance and abstinence.	
Nineteenth	53	30	Suchiquecal or *Xochiquecal*, wife of *Tzinteutl*, invented spinning and weaving. Goddess of pregnant women. The sin of first woman. She holds a serpent. Women who washed, spun, or wove, held a festival in her honor.	*Tlatocaocelotl* and *Xochiquetzalli.*
	54	31	Tezcatlipoca, opposite to her, with claw hands and feet,	

			seems to invite her to sin. Fig. 1, the devil tempting Eve before she sinned.	
Twentieth	55	32	Iztapaltotec; means, large or bloody stone, or bloody knife of unhappy *Yztapali;* properly, surface of the earth. Idol with open mouth.	The planet *Tetzauhteatl Huitzilopochtli*, accompanied by the sign *Teotecpatl.*
	56	33	No name. The figure represents the god of fire; renews and purifies all things; therefore placed last. The earth full of trouble and pains. Heaven was created on 1 Acatl; earth on 1 Tochtli; animals on 1 Tecpatl.	(*Teotecpatl*, the divine silex "*pedernal*," according to Boturini.)

Although there is some partial agreement between Gama and the interpreters of the Codices, in the 7th, 9th, 10th, and 12th trecenas, the fifth is the only one in which both the presiding deities are the same according to both authorities. This being the case, is not there some probability that the mythological figures in the corresponding trecenas of the Codex Borgianus (plate 50, lower part,) and of the Vaticanus No. 3776 (plate 44) represent respectively *Chalchiuhcueye* and *Tlazolteotl*?

The effort by the interpreters, to assimilate *Quetzalcoatl* with our Lord, is not sustained by either Sahagun or Gama, nor to my knowledge by any other writer of note: but neither of them attempts to identify that deity with St. Thomas, or suggests, as has been done by other authors, that this Apostle preached the Gospel in America. One of the most curious allusions of the interpreters is found in the story of *Cuatlicue*, a deity not mentioned by either Gama or Boturini, nor included in the enumeration of Sahagun in his first book. His being changed into a dog, for having eat fried fish before making a sacrifice, is analogous to the church command of performing the sacrifice of the mass fasting. But the repeated forced allusions to Eve and the original sin have rendered it extremely difficult to distinguish, in the interpretations, the real Indian legends from the wild notions of the interpreters, and have drawn them into several mistakes.

Neither the *Homecuya* of the first plate of the Codex Vaticanus No. 3738,* nor the *Tonacatlecatle* of its first trecena, who, though designated as the creator of the world, has Eve for his wife, are mentioned by the three authors Sahagun, Boturini, and Gama. *Tonacatl*, from the possessive pronoun *To* and *Nacatl*, means "our flesh," "our body;" and *Tonacacinga* (*cihua*) his wife, is the feminine, and means, "our

* One of the inferior deities mentioned by Sahagun, called *Omacatl*, presides over feasts and banquets (Dios de Convites).

female flesh." Amongst Sahagun's superior deities, is found *Civacoatl*, the "serpent woman," also called *Tonantzin*, "our mother:" and he, sober as he is in Scriptural allusions, calls her Eve, and ascribes to her, as the interpreters to *Tonatacinga*, all the miseries and adverse things of the world. This analogy is, if I am not mistaken, the only foundation for all the allusions to Eve and her history, before, during, and after the sin, which the interpreters have tried to extract from paintings which indicate nothing of the kind. They were certainly mistaken in saying that their *Tonacacinga* was also called *Chicomecouatl*, seven serpents. They should have said *Civacoatl* the serpent woman. *Chicomecoatl*, instead of being the cause of sterility, famine, &c., is, according to Sahagun, the goddess of abundance, that which supplies both eating and drinking: probably the same as *Tzinteotl* or *Cinteotl*, the goddess of maize (from *Centli*, maize), which he does not mention. There is no more foundation for ascribing to *Tonacacigua* the name of *Suchiquetzal*. This last goddess is represented in the 19th trecena by the interpreters themselves as the goddess of pregnant women, and as having invented spinning and weaving. By Boturini, under the name of *Macuil* (5) *Xochilquezalli*, she is called the goddess of legitimate love or of marriage. As the name is derived from *Xochitl*, a flower, the interpreters connected her with their other supposition, that the original sin consisted in plucking roses, when the tree broke, &c.

It is remarkable that the name of *Huitzilopochtli*, the great god of war, does not, in the interpretation of the Codices, appear as one of the deities presiding over any one of the twenty trecenas. According to Sahagun, this god and *Quetzalcoatl*, the god of air, were men deified after their death; and he mentions another inferior god of war, invoked when called upon to repel a sudden attack; his name *Paynal*, from the verb *payna*, to run hastily. The following are the principal deities enumerated by Sahagun, besides *Huitzilopochtli* and *Quetzalcoatl*.

Tezcatlipoca. A true invisible god, dwells in heaven, earth, and hell; alone attends to the government of the world, gives and takes away wealth and prosperity. Called also *Titlacoa* (whence his star *Titlacahuan*). Under the name of *Necocyaotl*, the author of wars and discords. According to Boturini, he is the god of providence. He seems to be the only equivalent for the *Tonacatlecottle* of the interpreters of the Codices.

Civacoatl, the serpent woman, and *Chicomecoatl*, already mentioned. They are the equivalents respectively of the *Tonacacingua* of the interpreters, and of the *Tzinteotl* or *Cinteotl* (goddess of maize), of almost all the authors.

Chalchiuhtlycue. The goddess of water, sister of the *Tlalocs*, gods of rain; literally means, precious stones; worshipped jointly with *Chicomecoatl*, goddess of abundance, and *Uixtocivatl*, goddess of salt.

Tlaculteutl or *Tlazolteotl* (alias *Ixcuina*), the goddess of illegitimate love.

Xiuhtecutl (alias *Yxcocauhqui*), the god of fire; also called *Uiueteutl* (huehueteutl), the ancient god.

The *Tlalocs* are mentioned as inferior deities; also *Xipetotec*, the disconsolate, worshipped at Zapotlan near Xalisco, the same as the *Thipetotec* of the interpreters; and, according to them, the companion of *Quetzacoatl.*

Tezcatzoncatl, god of wine, but with many associates, amongst whom *Pantecatl*, the *Patecatl* of the interpreters, and husband of their *Mayaguil* or *Cipaquetona*, for whom there is no equivalent in Sahagun. He mentions also as one of the gods of wine *Umetochtli*, found in Gama, and whose name seems to have been generic for that family.

Sahagun does not include in that enumeration, either the sun, *Tonatiuh* or *Ollin*, who was certainly (as proved by the Calendar Stone) one of the principal gods of the Mexicans, or *Mictanteuhtli*, mentioned by all other writers, and specially distinguished by the interpreters as one of the crowned gods.

His representation is found under the basis of the statue of *Teoyaomiqui*, and Gama has published the copy. According to him, the name of that god means, the god of the place of the dead. He presided over the funeral of those who died of diseases. The souls of all those killed in battle were led by *Teoyaomaqui* to the dwelling of the sun. The other fell under the dominion of *Mictanteuhtli*, and, as it seems, ceased to exist at the end of four years.

The names of several other deities, mentioned by the interpreters, are not to be found amongst the other above-mentioned authors. Upon the whole, the mythological paintings of the Mexicans remain almost altogether unintelligible to us. They are but very partially, and, as it seems to me, often erroneously explained by the interpreters, or rather commentators of the two only Codices, which are accompanied by any explanation. The aid which might be derived from the recovery of the Tonalamatl, has been often mentioned. A thorough examination and comparison, one with the other, of every hieroglyphic, or graphic figure belonging to the same subject, such as the period of 260 days in the five Codices where it is exhibited, aided by Sahagun's descriptions of the manner in which several of the deities were painted, may lead to some favorable result; and the discovery of the meaning of any one hieroglyphic or graphic figure opens the way to further discoveries. That thorough examination is almost an Herculean task, which I did not undertake. The labor bestowed on this branch of the subject has, indeed, been very unprofitable; and this imperfect notice can be of no other use than perhaps that of facilitating the labors of such persons as may wish to pursue the inquiry.

The subject is neither attractive, nor one of great promise. It is not probable that the interpretation of the names and attributes of the deities, represented in the several Codices, could throw more light on the religious creed of the Mexicans, or on its influence on their social state, than we derive from

the accounts of the conquerors and the Indian traditions collected by the early writers. Their mythology, as far as we know it, presents a great number of unconnected gods, without apparent system or unity of design. It exhibits no evidence of metaphysical research or imaginative powers. Viewed only as a development of the intellectual faculties of man, it is, in every respect, vastly inferior to the religious systems of Egypt, India, Greece, or Scandinavia. If imported, it must have been from some barbarous country, and brought directly from such country to Mexico, since no traces of a similar worship are found in the more northern parts of America.

TABLE

Trecenas, acc

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PLATE 38.

	Trece-nas.	d.					Trece-nas.
16.	15	19th	14.	12.	11.	10.	9	17th
4.	3	15th	2.	20.	19.	18.	17	13th
12.	11	11th	10.	8.	7.	6.	5	9th
20.	19	7th	18.	16.	15.	14.	13	5th
8.	7	3d	6.	4.	3.	2.	1	1st
			d.					

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			Trece-nas.	t o o d.					
12.	13.	14	19th	16.	17.	18.	19.	20
20.	1.	2	15th	4.	5.	6.	7.	8
8.	9.	10	11th	12.	13.	14.	15.	16
16.	17.	18	7th	20.	1.	2.	3.	4
4.	5.	6	3d	8.	9.	10.	11.	12
			t o o d.					

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			7.	8.														
cs.			Trece-nas.	e e n unknown hieroglyphics.														
12.	h	13. i 14	19th	1.	i	12.	a	13.	b	14.	c	15.	d	16.	e	17.	f	18. g 19. h 20
20.	a	1. b 2	15th	9.	b	20.	c	1.	d	2.	e	3.	f	4.	g	5.	h	6. i 7. a 8
8.	c	9. d 10	11th	7.	d	8.	e	9.	f	10.	g	11.	h	12.	i	13.	a	14. b 15. c 16
16.	e	17. f 18	7th	5.	f	16.	g	17.	h	18.	i	19.	a	20.	b	1.	c	2. d 3. e 4
4.	g	5. h 6	3d	3.	h	4.	i	5.	a	6.	b	7.	c	8.	d	9.	e	10. f 11. g 12
cs.				e e n unknown hieroglyphics.														

ARTICLE II.

AN ACCOUNT OF SOME ANCIENT REMAINS IN TENNESSEE.

BY GERARD TROOST, M. D.,

Professor of Chemistry, Geology, and Mineralogy, in the University of Nashville, and Geologist of the State of Tennessee.

ANCIENT

INDIAN REMAINS IN TENNESSEE.

The Secretary of the Ethnological Society a few years since addressed a letter to the Rev. Dr. Lindsley, President of the University of Tennessee, asking for information on the subject of certain aboriginal remains in that State. This letter was handed to Professor Troost, and the following paper is the result of the application:

Rev. Sir:

You requested me, a few days ago, to communicate to you any facts which had come to my knowledge respecting the mummies which are reported to have been found in some of the caves in Tennessee, or any thing respecting the antiquities of the aborigines of our State.

Respecting these pretended mummies, I know nothing but what I have learned from hearsay. Several years ago, (between 1812 and 1814, during the war with Great Britain,) when most of our caves were ransacked for materials for the preparation of saltpetre, a body was discovered in one of them, wrapped in a kind of fabric composed of feathers, and the whole inclosed in a coarse kind of mat or basket; this body was not properly a mummy, but merely a dried *cadaver*.

Our much lamented friend, the late Dr. Roane, saw it at the apothecary shop of Mr. Bedford: it was then already mutilated by the visitors, who carried away every piece that could be broken off. I presume that this body was somewhat similar to those which have perished in the sandy deserts of Lybia. Dr. R. mentioned to me that the body had not undergone any artificial preparation—no incisions were observed; consequently it was not embalmed, as is the case with the real mummies.

I doubt whether this body was of remote antiquity. Any body placed in our saltpetre caves must, in a few years, be brought to such a state. I have visited several of these caves in Tennessee, in order to find out the causes which produced the saltpetre; being in correspondence upon that subject with Professor Reinwardt of Leyden, who had visited the saltpetre caves in the East Indies, and who supposes that the materials for the saltpetre were produced by the decomposition of animal matter, so abundant, according to that learned Professor, in those caves. Now no animal matter of any consequence is found in our caves, even in the *Big Bone Cave*, which, as its name seems to indicate, must have been the haunt of large animals. The fact is, that some bones of a single skeleton of the Megalonyx or Megatherium Jeffersonii, most of which are now in my possession, were found in it; and from this circumstance, originated the name of Big Bone Cave. I have given a description of this cave and of my views respecting the formation of saltpetre, which is published in the first volume of the "Transactions of the Geological Society of Pennsylvania;" from which it appears that a constant dry atmosphere circulates through these subterraneous places, and of course no putrefaction can go on in them.

But though the investigation of the antiquities of our aborigines does not form my favorite occupation, I could not fail to be struck, during my excursions through our partly wild State, with many circumstances connected with the existence

of old races of men which seem now wholly extinct. These races were very numerous. They were Idolaters; and perhaps, like the initiated in the mysteries of Osiris and Isis, they worshipped the Phallus. They came from the south—from a tropical region.

I say they seem to be extinct. A few years ago, my attention was attracted by a fine tumulus situated in a romantic spot on the junction of the French, Broad, and Holston rivers, in East Tennessee; on the summit of which the present owner, Dr. Ramsey, has made a flower garden. He gave me permission to dig here and there around this tumulus, and I had the good luck to find a whole skeleton; the bones were much mouldered, but the head was entire, and by imbuing it with some varnish, I succeeded in giving some consistence to the bone, which enabled me to carry it home. Shortly after, Dr. Morton in Philadelphia commenced his valuable work on the Crania Americana, and requested me to contribute to it. I sent him amongst some drawings of the skulls of modern Indians, that of the above mentioned skull: this skull differed so much from all of the American skulls in his possession, and he has the most numerous collection of them in the United States, that he suspected the correctness of the drawing; and it was only when he had compared the drawing with the object itself, that he gave it a place in his work: this skull is marked, "*from a mound in Tennessee.*" I have since discovered more of these skulls, males and females. They have all a lateral compression, which I attribute to the mode of fastening the infant on a piece of bark or other hard substance, in such manner that the mother could suckle it. The anatomical difference between these and other American skulls, can be seen in the above mentioned work of Dr. Morton.

That this race was very numerous, is manifest from the frequent and extensive burying places which we find in several parts of our State. I must first observe that, so far as we can learn from traditions among the present Indians, (and

I have consulted the oldest and the most instructed amongst the Cherokees and Creeks,) this State and Kentucky were never permanently inhabited by any tribe: they visited them only in their hunting excursions: they had an abhorrence of Kentucky, the land of dark and the bloody ground; and the burying places in which I found skulls of Cherokees, are few and not extensive. Now this is not the case with the burying places in which I found the skulls in question. I will only mention those that are found in our neighborhood: we have one near the suburbs of our town, which extends from near the Cumberland river almost to Mr. Macgavoc's; it is about a mile in length, how much in breadth I cannot say, the road and houses cover one side, and a cultivated field the other; in this field was a tumulus which is now worn down. From the part that I have examined of this grave-yard, I found that the stone coffins were close to one another, situated in such manner that each corpse was separated only by a single stone from the other; about one and a half or two miles from this, on the other side of the Cumberland river, is another burying ground, where the graves are equally numerous. At Cockerel's Spring, two or two and a half miles from the first mentioned, is another; about six miles from Nashville, on the Charlotte road, we have another; at Hayesborough, another; so that in a circle of about ten miles diameter, we have six extensive burying grounds. Some of our inhabitants consider these places as battle-grounds, and the graves as graves of the slain: but that is not the case. The Indians do not bury their fallen foes: but leave them to be devoured by the wolf, the cougar, and other carnivorous animals; their own slain they carry to their towns, or hang up in mats on trees—they have general burying festivals, when they collect the bones thus preserved, which are then buried; and thence, in my opinion, those numerous small graves, which are attributed, but I believe erroneously, to pigmies. I have opened

numbers of these small graves, and have found them filled with a parcel of mouldered bones, which, judging from some fragments I have seen, belonged to common sized men. In one of them I found, amongst these mouldered bones, two occipital bones—of course it was a mere mixture of bones, belonging to more than one body. These bones lay without any order. This is not the case with the bones in the graves of the old extinct race, whose graves are much longer, the skeletons being generally stretched out. Nevertheless, I have found them also more or less doubled up, so that the part of the thigh-bone which forms the knee, lay near the lower jaw; in other graves I have found the head, face downwards; in fact, they seem to have buried their dead in any position. The present Indians bury their dead generally doubled up, the thigh against the breast.

As to the form of the graves, they are rude fabrics, composed of rough flat stones (mostly a kind of slaty limestone or slaty sandstone, both abundant in our State). Such flat stone was laid on the ground in an excavation made for the purpose; upon it were put (edgewise) two similar stones of about the same length as the former, and two small ones were put at both extremities, so as to form an oblong cavity lined with stones, of the size of a man; the place for the head and feet had the same dimensions. When a coffin was to be constructed next to it, one of the side stones served for both, and consequently they lay in straight rows, in one layer only—I never found one above the other.

They were buried with their valuables, such as lares, trinkets, and utensils; these all being of a very rude construction, and all formed of some natural product, none of metal, it is evident that they were less civilized than the Indians were when America was discovered by Columbus.

The examination of these trinkets, etc., has created in me the opinion mentioned above, that they came from some

tropical country. For as far as I have been able to ascertain, beads seem to have been the only imperishable trinkets they possessed, and of these I found many; I found also the materials of which they were formed. Some of these beads were merely marine shells of the genus *marginella*, only found on the tropical shores. These shells were ground in such manner that a string could pass through their mouth and perforated back. Other beads were made of the columella of the *strombus gigas*; I am positive it was of that part of this shell, as I have found these beads in all stages of manufacture from commencement to completion. These columellæ are often found on the shores in the West Indies; when the animal of these shells is dead the shell is constantly rolled and worn down by the waves on the beach, so that all the outside and interior whorls are soon worn down, and nothing but the solid columella is found. Such columellæ I have found, in a partly decomposed state, in the graves;—I have found them artificially worn down to an uniform thickness, and perforated through the centre;—I have found them cut to pieces of the size of the beads,—and I have found the beads perfect. These natural products could not have been brought from the north; they could not have been found in the interior of the country; they could not have been bought of travelling peddlers, because it is not to be supposed that such rude people knew any thing of commerce; the aborigines themselves must therefore have brought them from these southern regions—not during their hunting excursions, for we are about 2,000 miles remote from the places where these shells are found.

I have in my collection an idol which was found by ploughing new ground.* This idol was yet in its sanctuary,

* What we call *new ground* here is such as has never been under cultivation, and is for the first time reclaimed from its primitive forest state.

namely, in a large shell (*Cassis flammea*, Lam.), the interior whorls and columella were all removed, so that nothing but the external shell remains, which was opened in the front, sufficiently to permit the image to enter; this shell also belongs to the tropical productions.

The utensils which I have found were all made of different kinds of stone, most of which may be found amongst the primitive rocks in North Carolina or Missouri States, and some even in Tennessee; one, however, namely, an obsidian, must have been brought from South America. We know that this volcanic substance is found in several parts of the Andes, particularly in Quito, Popayan, at the volcanoes of Puracé and Sotora, the mountains Las Nabayas, and Mexico.

These facts seem to place it beyond doubt that they came from southern regions. I observed above that they were idolaters and probably worshipped the Phallus, as did some ancient nations—Egyptians, Phenicians, and Greeks. I had the good fortune to obtain, during my rambles, several images which, no doubt, must have served for religious purposes; they have all, at least such as were not too much mutilated, some similarity in their position—they are all in a kneeling position, and sitting on their heels, all naked. Some of them have their hands around their abdomen; others, as in the following cut have their hands on their knees. Two of these images, a male and a female, are the largest I have seen, being sixteen inches

high; they were found in Smith County, and are made of a kind of sandstone, and are of a rude sculpture. The male seems to be a rude imitation of an ancient Priapus; he is more or less injured by the plough by which he was brought up, and which has broken a large *membrum generationis virile in erectione:* the marks of the ploughshare are yet visible, passing from that part over the face, breaking part of the chin and nose. The person who ploughed it up mentioned that it possessed this member, but he considered it too indecent to be preserved. It is not the only instance that this *pars genitalis* has been found. Doctor Ramsey, who has a fine collection of these antiquities, has two *simulacra* of this member: the one is carved out of stone similar to that of my images, and is of a rude construction; but he has one which is made of a kind of amphibolic rock, and perfectly resembling the natural object. The latter, if I remember right, is about twelve inches in length, the other three or four inches longer. The one made of amphibolic rock must have taken a long while to make it, it being a very hard and tough rock on which steel cannot make any impression; it must have been ground down with a substance of the hardness of emery; nevertheless it is perfectly smooth, having the fat or greasy lustre characterizing these rocks. It is not probable that they would have spent so long a time on an object merely to sat-

isfy some voluptuous propensities or whims; they must have served some more serious purposes, and it is very probable that they held them in the same veneration as the Greeks, who consecrated the organ of generation in their mysteries. The *Phallus* and *Steis* were exposed in the sanctuaries of Eleusis. The Egyptians had consecrated the Phallus in the mysteries of Osiris and Isis; and, if I am not mistaken, father Kircher mentions, on the authority of Cortes, that this worship was established in America.

I have another image made of stone similar to that of the two above mentioned, but it is only nine inches high: it much resembles the first. It was found in the Sequatchy valley.

A fifth, which was found in Sumner County, differs much in figure, and in the materials of which it is made, from the above mentioned images. It is made of clay mixed with pounded shells, and judging from its red color, it must have undergone a certain degree of heating; it is entirely hollow, and has a hole on the back of the head through which the finger was introduced to mould the clay in its present form. It is a female.

The image in its sanctuary, mentioned above, is made of the same materials as the preceding, which it resembles except in its features. It was found in the Sequatchy val-

ley by ploughing. It was in its chapel (a *cassis*) as observed above.

I have, besides, four heads, which have belonged to similar images, and which are made of the same mixture of clay and shells, and are of a still more rude construction than those above described.

In order to give a better idea of these images, I have had drawings made of them by Mr. Heiman, in which they are perfectly represented.

We have many tumuli, and some remarkable ones, in our State. The oldest Indians know nothing about their construction. I have reason to believe they were constructed by the race who have made the above described idols. The most remarkable one is called Mount Pinson, situated in the Western District. It is the highest that I have seen, (perhaps ninety or one hundred feet,) of a conical shape, terminating in a small level about twenty feet diameter, and is surrounded with circumvallations. I have been able to ascertain from that mound that these tumuli were not burying places for the dead, as is often supposed. A person having discovered by the divining rod, as he thought, that money or silver was buried in this mound, has made a section in it from the summit to the very base: this section shows that the whole was made of common earth of the surrounding country,—not a single bone or utensil was found in it. Large trees lay pros-

trate on the summit, which had fallen down by age, and large trees (of eighty and ninety feet high) were now growing upon it. We have places in Tennessee and elsewhere which are considered as ancient fortifications, as the *stone fort* at the junction of Duck River and Berry's Creek. It is a rude elevation, constructed of rough stones, which shows some skill in the art of defence, but not against fire-arms. Some large circumvallations are seen in the Western District, as in Derry County; these are attributed to De Soto and his followers. I cannot say that I am of the same opinion; these circumvallations inclose a great number of acres of ground (perhaps fifty); certainly too extensive for the defence of any number that De Soto could have had under his command.

G. TROOST.

ARTICLE III.

OBSERVATIONS RESPECTING

THE GRAVE CREEK MOUND,

IN WESTERN VIRGINIA;

THE ANTIQUE INSCRIPTION DISCOVERED IN ITS EXCAVATION; AND THE CONNECTED EVIDENCES OF THE OCCUPANCY OF THE MISSISSIPPI VALLEY DURING THE MOUND PERIOD, AND PRIOR TO THE DISCOVERY OF AMERICA BY COLUMBUS.

WITH PLATES

BY HENRY R. SCHOOLCRAFT.

OBSERVATIONS RESPECTING

THE GRAVE CREEK MOUND.

Notices of the period when the existence of Mounds and ancient Fortifications was first observed west of the Alleghanian chain of Mountains, and south of the Great Lakes.

The antiquities of the Mississippi Valley have, for many years, excited attention; they constituted one of the first subjects of interest noticed in crossing the Alleghanies, towards the West; but this interest has received a new impulse, from late disclosures, more particularly from the opening of the great mound at Grave Creek, in the Ohio valley, and the discovery therein of an inscription in antique alphabetic characters. Men appear to have trod these valleys, at an ancient epoch, who had the art of recording vocal sounds. The early and common impression of the preoccupancy of the country, by a people having some further claims to civilization and art than the existing Red Race, is thus revived and strengthened. The discovery named, furnishes, at least, a suitable occasion for investigating these ancient evidences, so far as the tumulus in question is concerned, and of trying to determine, by tangible and demonstrative proofs, how far former or existing opinions are entitled to credence. Very little more will be attempted here, in truth, than to inquire into the state of the facts, and report them for consideration and study. It is with this view that I submit the results of my recent visit.

The fact that mounds, large pyramids of earth, and circumvallations of a semi-military character, existed in various parts of the region west of the Alleghanies, in the condition of ruins partly overgrown by the forest, became known as soon as the purposes of war or migration induced our population to cross those heights.

The precise era of these early discoveries, is not certain. It was long anterior to the settlement of Kentucky, Tennessee, and Ohio. How long, it is not easy to determine. Davies, in his account of the Caribs, in 1666, speaks of the occupancy of the region by the Appalachians, and other nations, having regular governments and polity. The fact of the existence of such ruins became so imperceptibly known to the first settlers, and so fully incorporated with popular intelligence, that no little research would be necessary to trace out the first date of this species of information, were it deemed important. Mr. Jefferson, in his Notes on Virginia, which were composed in 1791, called attention to the general fact of such remains, and accompanied his suggestions with some definite examples. Carver, in 1767, first noticed the fact that such remains extended as far north as the latitude of Lake Pepin, on the upper Mississippi. Lewis and Clark found them quite high up the Missouri, in 1805. The early French travellers and missionaries appear to have been but little observant of this class of facts. Stoddart, Breckenridge, and other writers of the intermediate period of the settlement of the West, notice them. We may, however, regard the settlement of Ohio, and the discovery and description of the curious works found at Marietta, at the mouth of the Muskingum, as the actual era of general or popular knowledge on the subject. As the country northwest of the Ohio river became settled, almost every emigrant had his attention more or less arrested by these antique remains. The progress of western discovery verified these early reports, and, from time to time, added to the number of such antiquarian evidences, and to the large extent of the area occupied by them.

One or two additional facts may be given in this connection. In 1820, the American Antiquarian Society published a volume, which embraces descriptions and plans of the principal discoveries of this kind, which had been made up to that date,—a volume which may be referred to, as one of our most valuable and authentic documents on the subject. There have been, subsequently, several notices of new discoveries of the kind, as well as others, of a new and peculiar character, published in the American Journal of Science. We allude to the low imitative mounds of Wisconsin. To the attentive reader of our magazine literature, and of the occasional notices and contributions of the diurnal press, it is known that vestiges of these industrial, sepulchral, or warlike labors, of the primitive occupants of the West, have been found to spread with the advancing and widening circle of our settlements for the last five-and-twenty years. Such vestiges exist, throughout all the latitudes west of the mountains, from Louisiana to the borders of the great lakes, extending to Wisconsin and Iowa. They appear to have spread with the zea maize, and to have dwindled away, or ceased with its easy cultivation. I found no evidences of the kind at the sources of the Mississippi. There are no traces of it, indeed, known to exist above St. Anthony's Falls.

It is nevertheless true, that so far as respects the early connexion of the races of Europe with this continent, prior to the known era of its discovery, there is no object among the antique works and ruins discovered in the west, which has assumed the interest now investing the antiquities of Moundville and Elizabethtown, at Grave Creek. It is the first point, in America, where an authentic inscription has been found, which holds out the hope of establishing this connexion of races, through the light of an alphabet. To this object we shall, therefore, without further pursuing the subject, confine our present attention. What are the facts con-

nected with the position of this gigantic structure? its dimensions, its contents, and the era and purpose of its construction? Who erected it? What is the language and purport of the recently found inscription? Who were the mound-builders? Was the continent known to Europeans before the era of Columbus? What race of Red Men first entered the Mississippi and Ohio valleys? Whence came they? Whither went they? Do their descendants remain? What are the leading facts of the Mound Period of our history? These are some of the inquiries the subject suggests.

Exterior of the Tumulus, its dimensions, structure, and geographical position.

This antique pile of earth has been called, by way of preëminence, the Mammoth Mound. It is believed to be the largest structure of this kind, of undisputed factitious origin, in America, north of Mexico. Monk Hill, on the left bank of the Mississippi, in Illinois, is six hundred yards in circumference, and ninety feet high; but this eminence, notwithstanding its regularity, is believed to be, in part, of geological formation. It has the character of an oasis, which may be supposed to have existed, while the great surrounding plain was covered by the Mississippi, during its pliocene period. Mount Joliet, in the same State, is five hundred and fifty yards in length, seventy-five in width, and eighty feet high, and of a regular ovate form, but this eminence has recently been found to be composed of a series of horizontal beds of small gravel sand and loam. The Blue Mound in Wisconsin, is elevated two hundred and fifty feet above the plain, and contains an area of rising of six hundred and forty acres of land. But this, like the preceding, has no claims to be of artificial construction. The same remark may be made of the two great mounds, so called, above St. Louis, on the right bank

o the Mississippi, which clearly belong to the boulder, or erratic block period, and are not the work of human hands.

The Grave Creek Mound, on the contrary, satisfies the inquirer at once, that it is a work of artificial construction. There are no evidences of geological action. It is a truncated cone, measuring some nine hundred yards in circumference, at its base, which diminishes to fifty yards at the top. It has an elevation of sixty-nine feet above the apex of the elevated plain on which it stands. It has been estimated to contain about two thousand five hundred cubic yards of earth. It is situated on the highest part of the upper plain. Its base is estimated to be about seventy feet above the summer level of the Ohio river, from the margin of which it is distant about one fourth of a mile. There is a wide and varied view from its summit, of the channel of the river, the subjacent plains, and the river hills around it, to the north, the south, the east, and the west. Had it been erected, in fine, as an altar of human sacrifice, a more conspicuous elevation, for its site, could not have been found on the plains.

The mode of its construction appears to have been by carrying earth in bags or vessels, from the plain, and emptying them out by hand. The earth is entirely made-earth, without the least appearance of stratification. It consists of black and yellow ferruginous sand, loam, and vegetable mould, similar in their elementary ingredients, in all respects, with the superior strata of the plain upon which the mound is seated. The removal of this earth appears to have been made in small portions, from several points, and at convenient intervals. There is no marked excavation at or near its base, from which the material may have been scooped up. The gulf or cul de sac, on Little Grave Creek, locally referred to as the spot which supplied the earth, is too remote a locality for a people who had no beasts of burthen. Besides, this singular cavity is evidently geological, and not the work of hands. There are no stones or boulders, large or small, in

the earth composing the mound. Its structure, where laid open by excavation, exhibits, amid the yellow loam and sand, black carbonaceous waves and spots, irregularly disposed, as if these mottled appearances were due, in part, to decayed vegetation, or to incinerated matter.

The men employed in the excavation found, after they had penetrated about eight feet in the first horizontal drift, blue spots of earth. On closer examination these spots were found to consist of ashes and small bits of burnt bones. It was evident that the coloring of the earth in these localities, had arisen from the action of the alkali upon the phosphate of lime contained in the bones. This opinion appeared to me to be sustained on personal inspection. The alkalescent properties of the earth were indisputable.

With regard to the exterior of the mound, the preceding view will convey its outlines, as seen at a moderately remote point. The wooden structure at the top is designed to afford visitors an eligible view of the really fine surrounding scenery. All portions of the sides of the mound are still covered with the natural growth of the forest, which adds much to its picturesque appearance, while these ancient trees constitute an important link in its chronology. The principal growth of forest trees noticed by me, were black and white oak, beech, black-walnut, rock maple, and the three-thorned acacia, or honey-locust. A black oak, standing on its northeast side, I judged to be thirty inches in diameter. There were others of but little less size, and many of from twelve to sixteen inches diameter. The most dense growth is on the southern side. The mound has evidently once been higher; its figure has also been more regular.

Considered with relation to the great geographical outlines of the continent, its position is quite interior, and out of the range of voyages to the sea-coasts of the Atlantic. It cannot be less than three hundred miles west of the Capes of Virginia, and about eighteen hundred miles north of the Gulf of

Mexico, following up the courses of the Mississippi and Ohio. Its precise geographical position is Elizabethtown,* Marshall County, Virginia. It is some twelve miles below Wheeling, and about three hundred and fifty miles in a direct line, a little south of east, from the principal scenes of a semi-civilized cultivation in the western prairies, which will be mentioned in a future paper. Geologically, the country is of secondary formation, and is included in the great Ohio valley coal basin.

Grave Creek Flats are about four miles in their longest direction, environed by moderately elevated ridges, which shelter the plains from the north winds, and afford a favora ble seat for cultivation. The lands are mellow, arenaceous and fertile, and must have furnished a favorable theatre for tillage to the ancient inhabitants, who were in the habit of laboring their lands with rude implements, and entirely without the aid of the plough or of cattle. This plain is bounded on the south by Great, and on the north by Little Grave Creek. The Ohio river passes from north to south, directly in front. There are several small mounds, on various parts of the adjoining plains, which together probably gave origin to the prevalent name of Grave Creek. Such is the position of the mound, geographically, and geologically.

Historical data respecting the discovery of the Mound.

The most easterly point in the upper part of the Ohio valley to which the ancient works of defence are known to

* Elizabeth and Moundville are two villages on the Grave Creek Flats. The former occupies the higher plain, which was the seat of the ancient occupancy, and is the locality of the mounds, large and small. The latter is on the lower plain, immediately fronting on the Ohio river. The division line between the two boroughs, I was told, bisects the great mound. The court-house and other county buildings, and the post-office, are in the former, which was laid out by the original proprietor.

have reached, on the first discovery of the country, was situated on the east banks of the Monongahela at Redstone, now Brownsville. It was called the "Old Fort at Redstone," by the early settlers, and continued to be known by this title long after the arrival of the European race, who at once gave proof of the eligible position of the spot, by selecting it as the site of a stockade fort. This was the initial point of the great trail leading over the Alleghanies, a route which was subsequently followed from Fort Cumberland, on the Potomac, by General Braddock, and has since, with but few changes, and those for the worse, been adopted for the Cumberland, or National Road.

To pave the way for the entrance of emigrants into this quarter, a long and sanguinary Indian war ensued—the war of 1744, which first brought Washington to notice. Its events are unimportant here. Fort Duquesne was finally taken by General Forbes in 1759, and named Fort Pitt. New Orleans had been founded by the French, thirty-seven years before, namely, in 1722; the mission of St. Ignace at Michilimackinac, in 1668; Detroit, as a fort, in 1701; Vincennes in 1710; St. Louis, not till 1764. In 1759, Colonel Burd was sent with two hundred men to cut a road from Braddock's road to the Monongahela, so as to form a more direct communication with Fort Pitt. He built a fort near the ancient Indian fortification of Redstone, at the junction of Nemocalling Creek with the river. This was then, and continued for many years, to be the point of embarkation for adventurers and settlers for the west. It was here that the first settlers of Western Virginia, Northern Kentucky, and Ohio, embarked. Colonel Cresap, whose memory is stained by one cruel deed, but who, in other respects, was a man of enterprise and intrepidity, first took up the site, and built a log-cabin upon it, about 1770. His claims to this location he subsequently transferred to two brothers of the name of Brown, from whom the place derives its present name. Mr. Gallatin settled above this point, on

the Monongahela, at a place which he called Geneva, in 1784. The first treaty with the Indians was formed with the Delawares, at Fort Pitt, in 1778.

The first deed of lands from the Indians was a grant from the Six Nations in 1768. It conveyed the tract between the Ohio and Monongahela, to William Trent and others.* Between the first settlement at Redstone in 1770 and 1774, several stockades were erected in various parts of the Ohio valley. Among the earliest were those at Wheeling and Grave Creek, both which appear to have been built on the breaking out of the Indian war in 1774.

A few other dates may be given to indicate the era when population from the Atlantic first found its way across the Alleghanian ridge, and began to spread itself among these ancient ruins of a prior race. In 1776, while the declaration of independence was being promulgated at Philadelphia, and the first blood was drawn at Lexington, settlements were commenced at Royal Spring and other places in Kentucky. In April, 1778, Col. George Rogers Clark proceeded against the posts in the West. On the 4th of July, at midnight, he took Kaskaskia; and the next night, Cahokia; soon after Vincennes fell by a stratagem, and before midsummer the conquest of Illinois was complete. In 1785, Fort Harmer was built at the mouth of the Muskingum; in 1787, Congress extended its jurisdiction over the territory northwest of the Ohio, and appointed a governor and judiciary, and provided for a legislative council. On the 7th of April, 1788, the first settlers landed at Marietta, from the "Mayflower," built at Redstone. Cincinnati was laid out at the site of Fort Washington, in 1789. In 1793, the Indian war was terminated by the military successes of General Wayne, and the conclusion of the treaty of Greenville. And seven years afterwards, Ohio was erected into a state.

* Jefferson's Notes on Virginia.

Wherever the settlers went, over a very wide and well defined area, comprising the great hydrographical basin of the Mississippi valley, they observed a system of ancient mounds, connected with a peculiar species of fortifications, over which the forest had resumed its sway, and respecting which, the existing race of Red Men could give no satisfactory accounts. Every appearance indicated the occupancy of the country at a prior period, by tribes more matured in some features of their civilization than those erratic nations who were actually found in possession. New evidences of this kind were continually found, not only in the extension of these semi-military and pseudo-sacerdotal works, but these were connected with the disclosure of objects denoting, as it was thought, a higher state of the arts, and a more improved condition of society. And although we have reason to believe that these results were due to a superior degree of civilization, and increased numbers of the same generic race, yet there have continued to be some anomalies in western archaeology and antiquities, which it is a point of deep interest to explain.

From a narrative, which has been printed so late as 1843, Mr. Joseph Tomlinson, the original settler of Grave Creek Flats, emigrated from the vicinity of Cumberland, in the state of Maryland, taking the ordinary route of Braddock's road, across the mountains. In 1770 he reached these Flats, accompanied by his brother Samuel, but without his family. The two brothers built a cabin of logs, cleared some land, and sustained themselves partly by the chase till 1772, when Joseph brought on his family and took up his permanent residence on these Flats. At this time they were covered generally with a heavy and vigorous growth of trees. He had fixed his cabin about three hundred yards north of the Great Mound, the latter of which he first found by pursuing a wounded deer. It was covered by as dense and mature growth of trees as the surrounding district; he ascended to the top of the mound, where he found a level area, and first

definitely saw that it was not a hill but an artificial structure. He had previously observed smaller mounds on several parts of the Flats. Supposing them to be places of sepulture by the ancient inhabitants, they were called Indian graves; and hence the present appellation of the two streams which bound the plain, on the north and south, and of the fertile area between them.

The growth of timber surrounding the base of the mound was somewhat irregular; the most valuable and fertile portion of the plains, embracing the sites of all the small mounds, were generally covered with a smaller growth of timber. There were to be seen some cleared spots, irregularly disposed, which were called Indian fields; but upon the larger mounds, as well as upon the "ridges of the ancient fortifications," a term used to denote the sites of the towers and stations of observation, vestiges of which are still to be seen, trees of the same gigantic size as those of the Great Mound existed.

This mound, by its magnitude and apparent antiquity, became the point of chief interest, as it has continued to be to the present day. On reaching its summit he found dates and initials cut in the bark of a beech tree, which stood in a low bowl-shaped cavity;* one of these dates denoted that it had been visited in the early part of the reign of George II.

The figures "1734" were plainly inscribed in the bark. The depression or cavity was three feet in depth, with a diameter of about forty feet. The inscribed tree grew from the lowest part of it. In addition to the above date there were many others, but none except this of a date prior to 1770.

* The remark of Mr. Atwater, (American Antiquarian Society, Vol. I. p. 187,) that it was common for the mound builders to leave such a cavity or depression in the tumuli till they were finished, and the inference that this was an unfinished mound, was not sustained by the results of the excavations, since they proved that this cavity was produced solely by the subsequent caving in of the vaults.

These dates became so numerous between that period and 1790, that they reached up the sides of the trunk to the height of ten feet.

Another interesting fact, bearing on the chronology of the mound, is mentioned by the narrator; there stood on the western verge of the cavity referred to, upon the flat surface of the highest part of the summit, a large white oak, which decayed and perished from age about the year 1828. When it fell, the grandson of the first proprietor caused the trunk to be carefully cut off in order to count its cortical layers. "About five hundred," he remarks, "were found." Allowing a year for the growth of each layer, this would give the year 1328 for the commencement of its growth, being a period of 164 years prior to the discovery of America by Columbus. At this era, the Mexican empire was in its prosperity. The Toltecs, who had preceded the Aztecs in the valley of Mexico, had been conquered, and in part, at least, expelled. What was the cotemporary state of things in the higher latitudes of North America, is veiled in the shades of oblivion.

Grecian, Scandinavian, and British tradition, each lay claim to fill up this dark period with some events; but they are events which partake very little of the sober realities of history. Allusions in early classical drama and song may be employed to denote popular belief, but even the Sagas of the Northmen are executed in so vague and dreamy a tone, that neither history nor geography can make much use of them. And whatever these sources may seem to promise as to the early discovery and settlement of America, we must at least proceed with great care to their consideration, until we have more closely examined or procured more materials relative to the object before us. It promises, from its dark recesses, to supply us the light of an alphabet; and with this hope, whatever the result may be, the antiquary may certainly be excused if he interrogate the dusky monument, and each of its parts and enclosures, with a careful scrutiny. If much light

cannot be elicited from the inquiry, it may still aid in a measure to render the gloom less impenetrable and forbidding. It is painful, truly, to reflect, that the continent is without history or chronology till 1490.

Era and mode of excavation of the Mound, with an account of its contents.

It is one of the facts recorded in a letter published by the American Antiquarian Society,* in 1820, that the original proprietor, Mr. Joseph Tomlinson, would not suffer the demolition of the mound, in the slightest degree. All inquirers agree in stating, that he carefully guarded it, and would not allow a tree to be cut upon it, to the day of his death. His son Jesse, and his grandson Abellard, who both came to the inheritance, pursued the same policy. By this means, the monument remained unmutilated for a period of nearly seventy years, dating from the earliest settlements in the western country. Reasons for opening it, at length operated on the mind of the grandson, who is the present proprietor, which led him to make preparations for it, early in 1838. He formed the plan to open a gallery from its northern base to its centre, to be intersected at its terminus, by a perpendicular shaft from the centre of the depression in the plane of its apex. To preserve the mound, he determined to secure the work by brick walls, that the interior might be visited. To carry out this idea, and add to the gratification of visitors, he determined to build a wooden tower, of three plateaux, each of less dimensions than its inferior one, being somewhat in the teocalli style, over the top of the shaft, to crown the whole. A rotunda was excavated at its base, and this was converted into a museum to exhibit the articles discovered.

* Vol. I. p. 187.

He commenced his labors on the 19th of March, as he states in a published letter,* working at it himself, with other laborers. They commenced at the level of the plain on the north side—making a horizontal gallery, seven feet wide and ten feet high, including the curve of the arch. This was carried in, one hundred and eleven feet, when they came to the ruins of a vault, or rude sepulchre, which, on being opened out, disclosed a parallelogram eight feet by twelve. This vault was dug out carefully and explored, agreeably to its original dimensions. It was found to be seven feet deep. Amongst its contents were the carbonaceous remains of wood, and also uncut stones, which had formed a part of the walls and roof. The excavation of the gallery was made in a dry mixed earth, which was so compact from the pressure of the superincumbent mass, that after proceeding a certain distance, it was firm enough to preserve its walls and arched roof without the necessity of continuing the brick work far from the exterior opening. By the dark and carbonaceous character of certain parts of the earth, which thus exposed contrasted with its yellowish, or gray parts, it was evidently a mixed pile of sand and loam and carbonaceous particles. Some portions of this earth possessed, as is still apparent, an ashy degree of friability, and there is perceptible to the visitor along the entire passage, and in the rotunda, a manifest alkaline odor. It became evident in making this horizontal drift, that the builders had availed themselves of a natural hillock, some seven feet high, as a starting point, to begin the pile. The waving dark carbonaceous line of the original grassy surface, and the uniform character and drab color of the sandy stratum below this line, render this arrangement very plain to the visitor.

This vault, it was found, had been dug into the natural hillock mentioned, and its original dimensions were thus clearly preserved. It was an exact parallelogram, having its

* Western Pioneer.

greatest length from north to south, and its sides accurately corresponding with the cardinal points. It had been constructed by setting upright timbers around the area, and covering these over with other timbers horizontally laid. Upon these timbers loose unhewn stones were piled. These stones I examined; they are silurian rocks of the carboniferous series of the Ohio valley, and of the same quality and species which are common in the neighborhood. Some of them, it was thought, had been conveyed about three miles from Parr's Point; others from the bed of Great Grave Creek. They are all, as examined, of the sandstone or quartz type, and members of the leading formation of the Ohio valley coal basin. The decay of the timbers had precipitated the stones into the vault, together with a portion of the superincumbent earth, and thus pressed down the skeletons, and buried them, as it were, anew, amid sand and rubbish.

In this vault were found the osseous remains of two human skeletons, both in a state of decay, the teeth only being perfect. Around one of these skeletons were found a large number of beads, of a peculiar character, which will be presently described, together with a kind of collar, or yoke-shaped neck ornament. With the other, no ornament or object of factitious origin whatever, was discovered. The pelvis and some other anatomical evidences, denoted, it was thought, that one of the skeletons was that of a female. Every bone and ornament was carefully disengaged from the earth, and preserved for examination; the stones were removed to the front of the mound, and the entire vault cleared out, and scrutinized, but nothing further discovered. This first disinterment was made on the 4th of April, after a continuous labor of sixteen days. They had now penetrated to about the centre of the mound. This constituted the first division of the labor.

Mr. Tomlinson and his men now left the gallery and vault, and ascending to the top of the mound, commenced

sinking a shaft in the lowest part of the concavity before referred to. This shaft was ten feet in diameter. The work was carried on at intervals and with much labor, as the earth had to be raised by a windlass and bucket, and afterwards carried by hand down the steep sides of the mound. By the 9th of June they had reached a depth of from thirty-four to thirty-five feet, when a second vault was discovered, very similar in its mode of construction to the lower vault. It differed however in this, that its greatest length was from east to west, lying *transversely* to the one below. It was situated above and directly over the lower vault, the floor of the former being about sixteen to seventeen feet above the roof of the latter; its exact dimensions are not stated, but may be inferred from the descriptions given to be *smaller* than the first, for it was found to contain the remains of but a single skeleton. Like the lower vault it was filled with loose earth, decayed wood and stones, pressed in by the weight of earth above. With a partial exception its floor was also sunk in to some extent, by the giving way of the ceiling of the lower vault. The cranium and other bones of this skeleton were found in a state of greater decay than those below; with it, however, were found a large number of ornamental articles. Among these were not less than seventeen hundred beads of the species before noticed, five hundred small sea shells (univalves), five copper bracelets, and a hundred and fifty small plates of mica. But the object which has excited the greatest degree of interest was a small flat stone, of an ovate shape, containing an inscription in unknown characters. Several descriptions of this stone and its inscription have been given by the western diurnal press, but all differing in some particulars from each other; and each, as is found, more or less from the original. To attempt its study or explanation under these circumstances, would only have exposed the observer to error, and could not but tend to mislead where it professed to instruct. A wood-

cut of this inscription was first published in a Western paper.* A copy of this figure I transmitted with a notice of the discovery in the autumn of 1841, to the Royal Geographical Society of London. Early in the winter of 1842 a second copy of the drawing was transmitted, with a brief notice, to Mr. Rafn at Copenhagen, for the Royal Society of Northern Antiquaries. From the interest felt in so unique a discovery, both these copies have been published in the respective transactions or journals of these Societies. No further public notice of the inscription appeared till the month of May, 1843, when another drawing of the stone, differing essentially in its characters from the preceding, was published in a Western magazine,† together with a letter from the present proprietor of the mound, giving an account of the original discovery of this tumulus in the forest, by his grandfather, and of the method which he pursued in penetrating its recesses, and laying open its antiquarian remains. Both these documents were carefully examined, after the transmission of the two copies abroad, and after my return from Europe, where the subject excited notice.

In the meantime, doubts arose as to the accuracy of these drawings. In the early part of 1843, a pen drawing was sent in a letter, from an unknown correspondent in the West, to our associate, Dr. Robinson, which differed so much from the drawings previously seen, that the further attention of this correspondent to the subject was solicited. In reply, another drawing, differing from his first, was received. This copy, whilst it varied greatly from the prior one, at the same time denoted important errors in the wood cut of 1839. A comparison of the two drawings with the cut revealed such discrepancies, that the further study of the inscription was relinquished until a true and exact copy of it could be obtained. Under these circumstances my visit to the mound was made, in the month of August, 1843.

* The Cincinnati Chronicle, 2d February.

† The American Pioneer, Vol. II. No. 5.

I have thus narrated the history of the inscription stone from the date of its discovery, on the 9th of June, 1838, to the 21st of August, 1843, when I visited the rotunda in the mound and took accurate impressions of the inscription During the time spent at this place, visits were made to all such objects in the neighborhood connected with its antiquities as I could hear of; and drawings taken of the various objects accumulated in the rotunda-museum. An outline of the original plan of the ancient works on these flats was also drawn, in which the position of the mounds, the ancient stations of observation on the hills, and some broken remains of trenches on the plains, were the only data, respecting which entire certainty could be had. From these, however, it is shown to have been an antique station, or place of fixed residence of magnitude, embracing, in its extreme points from north to south, about three and a half miles. That all this area could have been defended on any thing like military principles, is wholly improbable. It was apparently a system of mounds, palisadoes, and lines, sufficient to guard against night surprises; but which included also the entire agricultural area. It had, doubtless, certain eminences and sally-ports, so to denote them, where resistance to an open invader, fighting with darts and other light missiles, might be made to assume a concentrated and effective form. In this respect it agrees very well with the generality of western mound-works, but is inferior, as a work of defence, to those at Marietta, at Circleville, and at numerous other points.

Character of the Inscription—comparison of the alphabet—its identification—probable subject.

It is, indeed, in the inscription alone, that this tumulus, gigantic as it is, differs from all the other mounds of the Mississippi valley, and, in truth, of the Continent. All other interest

becomes subservient to this, since it is the first monument, so far as we know, which appears to bear an alphabetic message from the great unknown void of our aboriginal history, to the present time. And in this respect, the first impression that strikes a visitor who takes up the inscription stone and glances his eye over its characters is, that it is an inscription, not, as prior theories would lead us to suppose, from the alphabets of the oriental world, at least from beyond the Euphrates, but from those derivative characters of the transition epoch, which spread, at an ancient day, from the shores of the Mediterranean over western and northern Europe,—such as were used by the Celtic priests and bards, and the Scandinavian skalds, prior to the general introduction of the Roman alphabet. It has nothing in common with the phonetic or Nilotic system; nothing which much resembles the present Hebrew characters; very little, in fine, which connects it, except remotely, with the eastern hemisphere. Heretofore, all our American inscriptions have been in the method of the idiographic or picture writing, in which the Mexicans so much excelled, or, at most, in hieroglyphics, such as are, *apparently*, inscribed at Palenque and at Chi Chen. It has been reserved, it would seem, to this mound, and to the Ohio valley, to open a new mode of ethnological inquiry, which, it may not be too much to say, elevates the history of the MOUND PERIOD to a branch of literature.

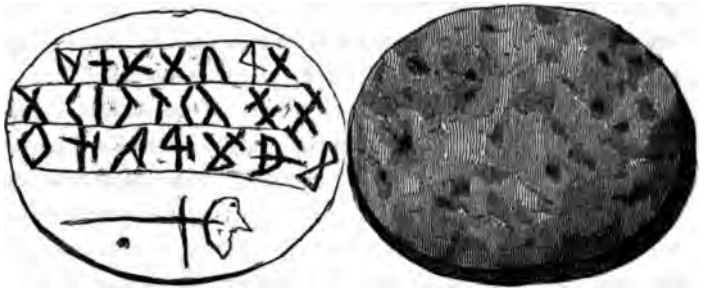
Such were at least my impressions on visiting the mound. I found this curious relic lying unprotected among broken implements of stone, pieces of antique pottery, and other like articles. These were arranged for exhibition in the rotunda constructed under the centre of the mound, and at the termination of the horizontal gallery mentioned. This rotunda is twenty-eight feet in diameter, bricked around to the height of nine feet, and ceiled over with timbers and plastering. From its centre rises a circular hollow column of brick, which occupies the space of the shaft. Around the base of this

column there is a circular shelf provided with wire cases, in which the bones, bead ornaments, and other objects of interest, found in the vaults, are arranged. The place was dark, or but dimly lighted with a few tallow candles, which cast round a sepulchral glare on the wired skeleton and other bones spread around. Silence added its impressive influence to the panoramic display of so profound and humid a recess. It was warm August weather, yet the damp and acrid character of the atmosphere in this area, were such, as sensibly to affect the respiratory organs. The candles used to render objects visible, burned heavily, in an atmosphere so evidently loaded with foreign particles. But the most striking display hung from the ceiling. On casting the eye upward, there was seen depending from the plastered ceiling a white exuded mass. This exuvia was very white, and extended over a large part of the wall. It appeared to be the result of rain water slowly percolating from the surface and summit of the mound through earth, which, it may be supposed, was surcharged with residuary animal matter. Globules of water, rendered brilliant by the rays of candle-light, studded this unequally depending mass with splendent points, which gave the scene a striking yet sepulchral appearance. This effect was further heightened by the large skeleton arranged against the walls, and by the other disentombed objects. Drops of this white mass fell frequently to the floor, during my several visits. On examination it had the appearance of phosphate of lime, yet in such a state of minute chemical solution, that when a moderate ball of it was dried, it left but a thin flocculent trace on the paper enclosing it.

This exhibition of articles in the tumulus, is intended to gratify travellers, and hasty visitors, but it furnished an atmosphere deficient both in light and temperature, and by no means adequate to examine the various objects with care, far less to decide upon the character of the inscription. The attendant allowed me to take the latter to my room at the hotel,

where it could be viewed in a good light, and studied and copied at leisure. The annexed print is engraved from an impression taken in sealing wax, reproduced in plaster, and transferred to paper. The reverse of the stone is also given, to show that it contains no additional inscription, or marks whatever—a step which was judged prudent, from the insecure position of this relic, and as a further means of future identification.

REVERSE.



The stone is a compact, hard piece of dark or neutral colored sandstone, of an elliptical form, but not made with geometrical accuracy. It measures one inch and three-fourths in length, by one inch and a half in breadth. Its thickness is $\frac{2}{10}$ths of an inch. Its hardness is sufficient to resist a scratch of the knife. Its color is darker than appears to be natural on a fresh cleavage, and may be due to direct staining, or the effects of long continued inhumation in contact with carbonaceous particles. The edges only appear to have been wrought. Both the surfaces, although tolerably smooth and even, are clearly the result of the natural cleavage. The reverse denotes this more strikingly in its dimpled surface.

The characters, it will be seen, of which there are twenty-four, are arranged between parallel lines. These lines are not drawn with geometrical precision, yet are sufficiently regular to serve as a guide for the top and bottom lines of the inscription. All the characters and lines are plainly, but not deeply

or equally marked or cut. Unlike the figures on the Dighton rock, they have not been "pecked in." There are, strictly speaking, but two curved lines in the alphabet, all the rest being angular, and in this respect, resembling the Phœnician, Etruscan, and other cognate alphabets. Twenty-three of the characters are strictly arranged between parallel lines. The twenty-fourth, which is put below the inscription, is excluded from the linear arrangement. This final character has all the appearance of an idiographic sign, or hieroglyphic. Besides its isolated position, which removes it from the inscription, this figure is so much superior in size, as to occupy one third of the entire area of the stone. Without searching for remote resemblances, this figure would appear to represent a man's head borne on a pike. Such a figure is suggestive of the idea that the individual who was interred in such apparent pomp and state, in the upper vault, either recorded a military achievement, or the device may be considered heraldic, or astrological.

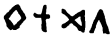
Of the character of the inscription, it will best fulfil the object in view, by stating the views which have been advanced on the subject by others. The opinion which has been expressed by the western press that the characters are "hieroglyphics," does not appear to have been founded on any accurate examination, or reference to sources of elementary information. They possess nothing of this character. With the exception of the final character above named, which, however, is rather a figure of the kind employed in picture writing, the inscription is evidently alphabetical, and not hieroglyphic. This exception may also be applied, but with less certainty, to the next preceding character , which in the bark scrolls and other examples of picture writing by the native race of this continent, is often put to signify death, or a person killed. The same figure is, however, found to terminate two ancient inscriptions in Gesenius, where its office is to denote such termination as a figurative period, without imparting any additional

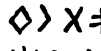
meaning; and the opinion is expressed by him and by others, that such a practice by the use of this particular figure, was common in the early inscriptive periods. Deducting these two figures, there remain twenty-two characters in the inscription. In a preliminary examination of the characters with our associate Mr. Turner (N. Y. Theo. Seminary), he remarked that this was the exact number of the Hebrew alphabet, and suggested that the inscription might be found to be an ancient alphabet, and not an historic record. This opinion appeared to be opposed by some repetitions in the inscription. Whether it be an elementary alphabet, or an inscription, recording some name, or event, is a question that may affect the amount of information it is designed to transmit from an unknown period to us, but does not take away the historical interest of the discovery.

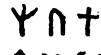
Of the general type of the alphabet, but one opinion has been expressed by philologists who have made an incipient examination of it; while the particular nation and people who employed it, and the language itself, are unknown. This species of alphabet, consisting chiefly of simple strokes intersecting each other at right or acute angles, was in use by the Phœnicians prior to, or cotemporary with, the introduction into that border of the Mediterranean of the Hebrew alphabet. Modifications of it existed in the Etruscan, Pelasgian, Oscan, and Arcadian, as exhibited in Gesenius and other kindred works. It is seen that this geometrical style of alphabet extended westward over Europe, spreading through ancient Gaul and the Spanish peninsula, and following the Celtic and Saxon stocks to the British Isles. Modifications of it existed throughout Scandinavia, and the northern confines of Europe. Mr. Rafn calls the Grave Creek character "Runic," but adds that it has more congruence with the Anglo Saxon Runes than with the character used in the North, at the time of the introduction of Christianity. That it came from the east to the west, crossing the Atlantic, at some early and unknown

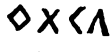
period, on the tide of early maritime adventure, or wafted by adverse winds, would seem to have been not an improbable extension. But this is a question, of which it is impossible to speak, except in the language of mere conjecture, until we have examined and deciphered the inscription; or, at least, have some further evidence besides the naked form of the alphabet before us. We, as yet, know nothing of the articulate sounds recorded on it.

Of the twenty-two characters, which are confessedly alphabetic, ten correspond, with general exactness, with the Phœnician of Gesenius. Fifteen (including the closed cross ⊠) coincide with the Celtiberic, as exhibited by Mr. Rafn in the *Memoires de la Societe Royal des Antiquaires du Nord*, Copenhagen, 1840–1843. *Section Americaine.* Fourteen correspond with the old British or Anglo Saxon, as exhibited by the same author. Five coincide with the old northern, or Runic proper, but four with the Etruscan, six with the ancient Gallic, four with the ancient Greek, and seven with the old Erse. This comparison is given from data not complete in all cases, and without attempting to have entered on a critical study of the inscription. It may, in the interest excited by this discovery, serve the purposes of popular comparison. These resemblances will be rendered apparent to the eye, and the relation these antique alphabets bear to each other be more fully appreciated, by the following comparative table. In preparing it, attention has been confined to plain coincidences of character, without any attempt to trace out remote analogies. Possibly equivalents for these characters may be found in the ancient Hebrew, but it is an inquiry which is entitled to a fuller consideration than can be given to it in the present paper.

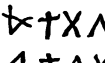
Ancient Greek. 

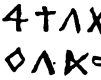
Etruscan. 

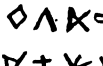
Runic. 

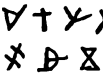
Ancient Gallic. 

Old Erse.

Phœnician. 

Old British. 

Celtiberic. 

Appalachian. 

Ascribing to these indications the weight which they appear to merit, the grounds of inquiry would seem to be narrowed down to the Phœnician, the old British, and the Celtiberic. Mr. Rafn, in the paper referred to, inclines strongly in favor of the latter. "So striking," he observes, is the similarity, "that at first sight we are led to believe that we have a Celtiberic inscription lying before us."* He also points out some striking analogies of form between this inscription and the Ancient Gallic, and also the old Erse; but a still greater number of coincidences between it and the British or Anglo Saxon Runes. By the latter, the old Bardic is meant. This latter coincidence originally impressed me forcibly in preparing a brief notice of the inscription above mentioned for the Royal Geographical Society of London, in 1841. I had then, however, seen but a single specimen of it, which is exhibited in Dr. Plott's History of Staffordshire.

Mr. Rafn labored under the disadvantage, however, in his comparisons, of having before him an imperfect copy of our Grave Creek inscription. By the corrected copy herewith furnished, it will be seen that the scale of the relation exist-

* Memoires, &c., supra.

ing between it and those ancient alphabets, is changed, while his conclusions are not essentially shaken. A greater number of coincidences, or nearly perfect resemblances, have been found with the Phœnician, the Anglo Saxon, and the Celtiberic, while those of the Etruscan, the ancient Greek, and the ancient Gallic, have been shown to be less. The resemblances between the Celtiberic and Anglo Saxon and old British alphabets, and between the two latter and our inscription, are very strong, and both have three or four characters, which are entirely wanting in the more ancient Phœnician. Equivalents are found in the Hebrew for all, or nearly all the Phœnician characters, which are found on the Grave Creek stone, but while the language, in which the inscription is made, remains unknown, and while discrepancies and exceptions exist in some of the characters, the sounds thus restored are essentially chaotic and unintelligible. Nor is the prospect of pursuing it, as a Phœnician inscription, in other respects, encouraging. We have, in Gesenius, the whole of the Phœnician alphabet, varying and fluctuating as it did in various ages; we have also now before us the Grave Creek characters in full; and it is sufficiently evident that there is no range in the process of these ancient changes, to justify the expectation that the twelve wanting characters, in the Phœnician, will be found. It would not be hazardous to discard this alphabet altogether from the comparison, and confine our future attention to the Celtiberic and Anglo Saxon alone. It is in one or the other of these forms of the alphabet, that we shall probably find the inscription, or the alphabet, to be recorded.

With regard to the subject matter of the inscription, it would seem, from its brevity, that nothing very elaborate could be recorded. From the shape of the stone, and its resemblance to the ancient cartouche, it may be considered as answering the same purpose, and as containing probably the name of an individual, with his armorial or genealogical device. Whether, on this assumption, he were the descendant

of a Phœnician through the old Iberian, an ancient Celt hieing west from the barren peaks of Snowdon or Anglesea, an adventurer from ancient Ireland or Denmark, or a still more northerly point of Europe,—these are questions pregnant with historical and antiquarian interest. The Red Man himself used no alphabet, on any part of the continent, so far as we know. Neither in Mexico, or Peru, or amid the ruins of Central America and Yucatan, or in the great valley of the Mississippi, had he made any approaches to it, beyond his ordinary picture-writing, or, at most, his mnemonic symbols. By the latter, the Meda could indeed sing his song, but the words perished with individual memory. He had forestalled, it may be said, Feinagle and Gouraud, in elementary mnemonics, but there was no alphabetic device. His most enduring monuments are not, indeed, to be sought in the structures of Cholula, or Palenque, or Grave Creek, but rather in the vocabularies and grammars recorded by early writers, and in the fine, sonorous, descriptive names which he has bestowed upon the prominent geographical features of the country. We do not underrate the value of his picture-writing, but it is a kind of evidence which relates almost wholly to his manners and customs, and religion, but is nearly valueless in history.

Some notices of the prior copies of the Inscription, published at home and abroad, may here be added.

All our earlier errors, in this respect, arose from a bad drawing originally published in the Cincinnati Chronicle, in 1839.

By comparing the above copy of the inscription with those heretofore published at London and Copenhagen, which are exact transcripts of our first copies from the WEST, the inaccuracies in these first drawings will be perceived. If the characters in these early copies be numbered from right to left, after the ancient manner, Nos. 2 and 3, and the terminating figure No. 24, will be found to be purely imaginary. In place of 2 and 3, there is a single character, reducing the

whole number by one. No. 4 is too angular; No. 6 is deficient in two strokes; and No. 8 redundant in one. No. 11 is deficient in one stroke, and consists, in the true copy, of two characters, thus restoring the count lost above. No. 13 is wholly erroneous, and Nos. 14, 17, 19, and 22, so far inaccurate as to render a safe comparison with the ancient alphabets impossible. There is a far greater approach to accuracy in the drawing published in the American Pioneer in May, 1843. Its principal defects are, a superfluous small cross-stroke in No. 2, a deficiency of a half line in No. 18 (the ancient D), and a false extension of an angular line in No. 21. The penultimate hieroglyphic carries the horizontal stroke (spear handle) too far into the figure of the head, omits the dot for the eye, and expands the frontal process, or nose, in a manner wholly unlike the original, which is acute and close. It also omits the heavy dagesh-like dot below, which may be regarded, perhaps, if not implying duplication, or strength, as a twenty-fifth figure, or sign.

The conclusions arrived at by the Secretary of the Royal Society of Northern Antiquaries at Copenhagen, may here be appropriately added.

"It cannot be assumed that the inscription owes its origin to any inhabitants of the North (he is speaking of Scandinavia, &c.), after the discovery of America in the 10th century. If it is old Northern, it must be from earlier ages, when the Anglo Saxon Runes, as they are called, were used here, in the North; which is established by no small number of monuments, and particularly one, which evidently is from the 5th or 6th century (confr. the Annals of the Society of 1842–43, p. 168, 169). Perhaps it may be conjectured, with the greatest probability, that the inscription owes its origin to tribes from the Pyrenean peninsula, who in very remote ages may be supposed to have visited the transatlantic part of the world; or to inhabitants of the British Isles, sojourning in this remote country before the close of the 10th century. Accord-

ingly, this may be considered as a result almost certain of the data before us ; that this inscription is of European origin, and of a date anterior to the close of the 10th century : the qualification almost may perhaps be judged unnecessary, still we put it, that we may not be blamed for prejudging a question of so much difficulty, more especially since the European alphabets, which we have compared with the inscription, are of a very ancient Asiatic origin. It is our anxious desire and request, that antiquarians of many different countries may turn their attention to this inscription, and communicate their ideas and observations respecting it ; and more particularly, that the numerous amateurs of antiquity in America may continue to exert themselves for the discovery of more monuments of such a high value, by which they would secure to themselves the merit of having largely contributed to the enlargement of science in general, and of clearing up the darkness of American antiquity in particular."

Personal ornaments and other objects of antiquarian interest discovered.

Particular attention may now be directed to the personal decorations, which are indicative of national manners and customs, with all our tribes. Prominent among these were a large number of shells and beads, and plates of mica, which had been interred with the skeletons ; with these ornaments were found several bracelets and arm-bands of copper, a gorget of an antique shape, and some analogous relics.

Marginella. (Fig. V. Plate 1.) The shells, of which I exhibit specimens and drawings, are all of one species, the *Marginella flairda.* This species occurs on the Florida coast and in the West Indies. By comparing the living specimens herewith shown, with the exhumed, their identity of character

will at once be seen; most of those found in the mound do not exceed five-tenths of an inch in length, many are but three-tenths. This indicates also the average size of the living species at this day. It is a delicate, yellowish, and brilliant little shell, with a pearly lustre, and those found at Grave Creek were probably brought from the localities named; if so, the fact may serve to denote the extent of their intercourse, if not the probable point from which the tribes originally migrated.

Wampum or Shell Beads. (Fig. IV. Plate 1.) The beads which have, in popular language, been denominated "ivory," have been carefully examined. They have no claim to the character of ivory; they have been so much altered by long exposure to subterraneous moisture, that the organic structure of their substance is not readily detected. The decomposed surface of these antique beads effervesces readily in nitric acid, denoting carbonate of lime; the elephant's tooth, which furnishes the ivory of commerce, is a phosphate of lime. In scrutinizing one of the specimens now presented, a striated structure was denoted, which, on completely removing the limy exterior, displayed a difference of color, and some faintly flesh-colored lines. I was led from this circumstance, and from its lamellar structure, to conjecture that they have been made from the conch, or some thick sea shell of analogous character; further examination confirms this opinion. Their structure is such as is imposed on shells by the inner periodical deposits of carbonate of lime from the animal. If the common oyster and conch be examined for this structure, it will be apparent. The native tribes manufactured such ornaments from sea shells, all along the Atlantic coast, from the Gulf of Mexico to the Gulf of the St. Lawrence, on the first arrival of Europeans, and it was only given up, when the latter became more expert in the art, or furnished a substitute. The article was variously called by the North Atlantic tribes, seawan, wampaug, and wampum. These an-

tique specimens can only be regarded as an ancient form of the article, which has become obsolete from the progress of the Indian trade. That the brilliant flesh-colored shells of the West Indian seas, and of the Pacific, were preferred for this purpose, is very well known, and is proved by the discovery of entire shells, of ample size, in their mounds and ancient burial places in the Mississippi valley, and at geographical points far towards the north. I saw, many years ago, in the collection of the late Gen. Wm. Clark at St. Louis, two heavy conches, which had been disinterred from a contiguous island in the Mississippi river. There was, some years since, deposited in the museum of Cincinnati, a curious bowl, formed out of this species by cutting off the superior portion, and eradicating the whorl. The distribution of these valued shells, and their progress in the native exchanges, was from south to north. In the month of October last year (1843), I examined, and took a drawing of, a large Pyrula of the species perversa, which was disinterred from a noted deposit of native bones and implements at Beverly, in Canada West. This specimen is $10\frac{2}{10}$ inches in length. At the same locality I found shell beads of precisely the same antique forms, and decayed surface, as those of Grave Creek. I exhibit specimens of both. As a further evidence of the high value attached to sea shells, and the extent of the operation of Indian exchanges of such articles, I mention that during my residence at the foot of Lake Superior, I observed Indian articles, ornamented with the shining white Dentalium elephanticum, from the mouth of the Columbia.*

Mica. (Fig. VII. Plate 2.) This mineral was not ordinarily used for the purposes of ornament by the North American Indians. The plates of mica found here, are all of the variety called *silvery mica*. This is apparent from some folia of a large and fresh specimen which I obtained on a visit at

* Vide Annals of the New-York Lyceum of Natural History.

the residence of a Mr. Michiltree, at Parr's Point, about four miles from the mound. This specimen had been taken from one of the minor mounds. It presents all its original mineralogical characters entire, in their original brilliancy, and demonstrates that an attachment of such folia, by threads run through orifices, may have constituted a brilliant ornamental shoulder dress, or warrior's scarf. The specimens from the mound are very fragile, and fissile and dull. They exhibit small orifices, which appear to have served the purpose mentioned. The uniformity of the mineral denotes that it must have been taken from a single locality, and this may probably be thought to exist in the southern heights of the Alleghanies. With respect to the existence of such a species of decoration, in Indian costume, it may be remarked that a variety of its type is still found among some of the Algonquin bands on the sources of the Mississippi. These war scarfs of the northern Chippewas, &c., are constructed out of brilliant colored filaments of skins, ornamented with shells and quills of the porcupine, and having the fine black points of deer's hoofs, or copper bells, to produce a jingling sound. A kind of martial shawl is thus made, called a Back Dress. It is a showy article, which at every step emits a jingling sound. It is attached to the breast by strings in front, and depends from the neck and shoulders. It is worn alone by warriors. The probable mode in which the antique mica scarf was worn, is shown in the drawing (Fig. VII. Plate 2). I also invite a comparison of the antique and fragile with the fresh specimens of this mineral obtained at the mound.

Metallic Wristbands. (Fig. IX. Plate 2.) Native copper was found in use, by all the tribes who could procure it, at the earliest periods. Of copper arm-bands, wristbands, or rings, there were five in number found in the superior vault, drawings of all which are shown. They consist, apparently, of native copper, much oxydated and corroded. These ancient ornaments appear to have been made from rods

PLATE I.

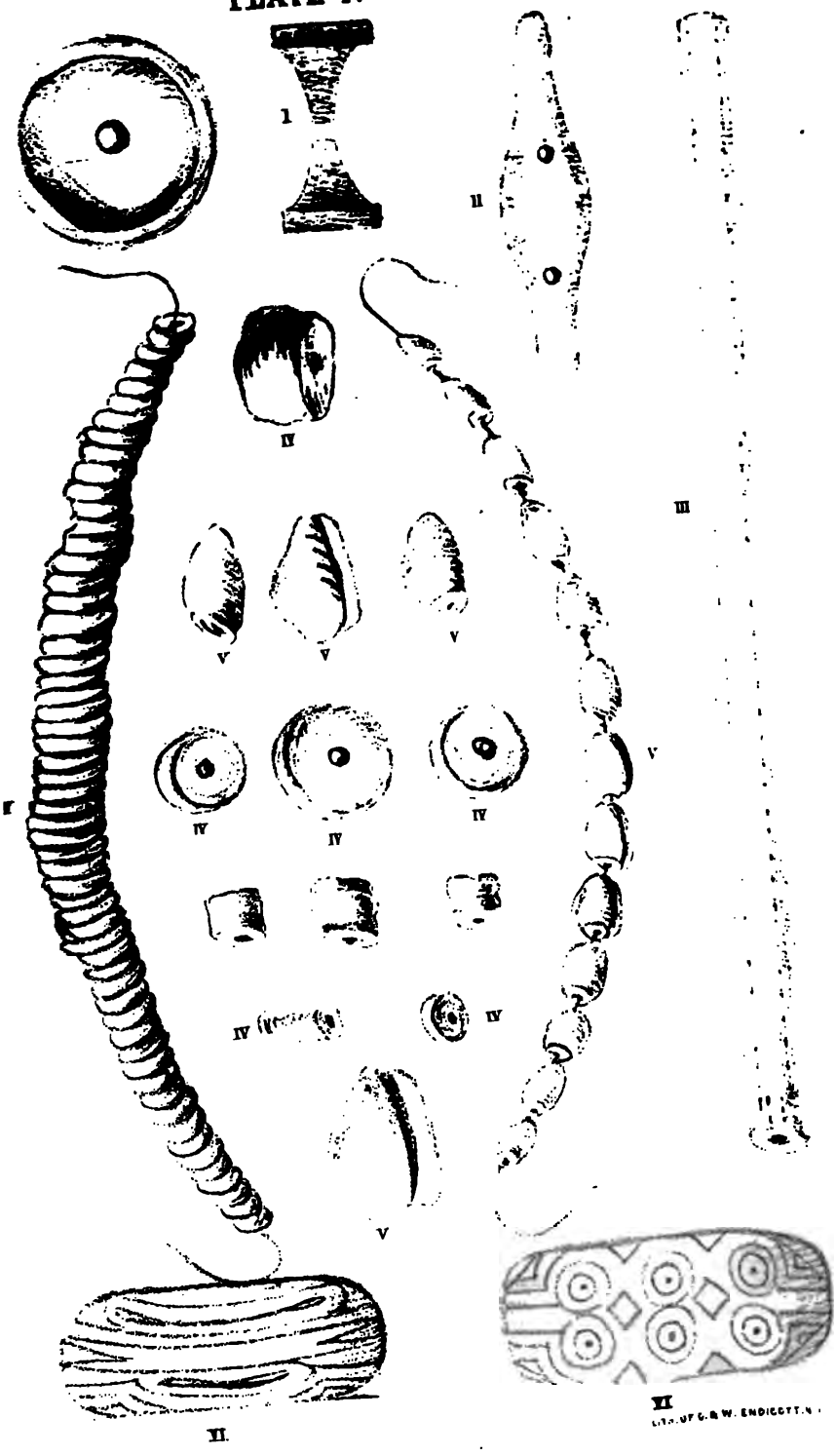
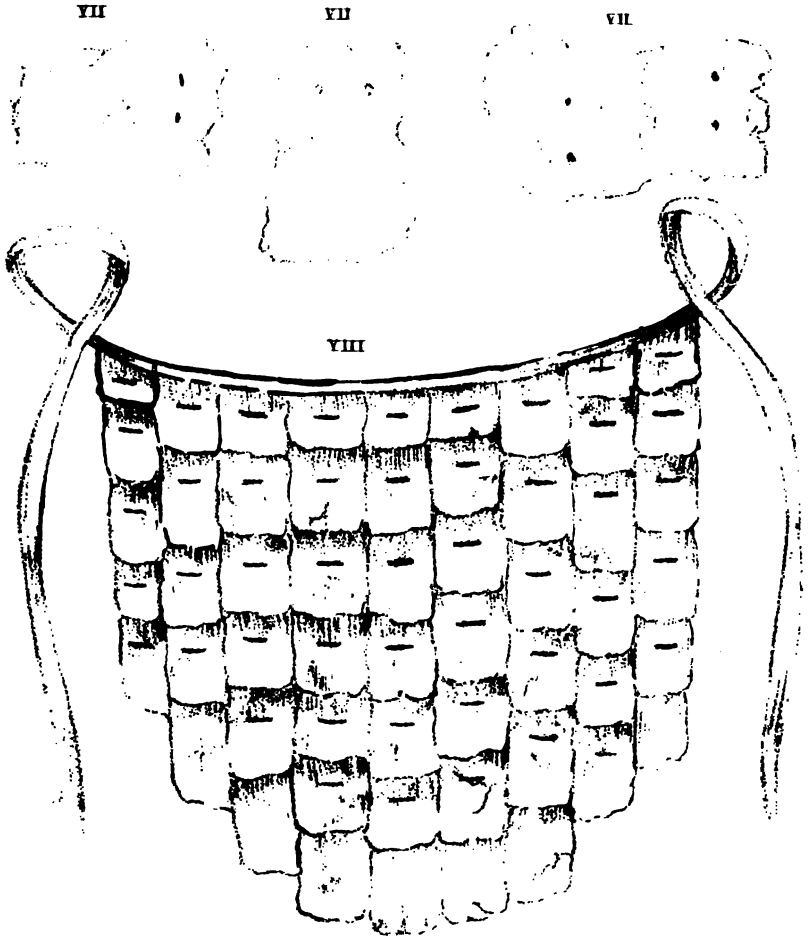
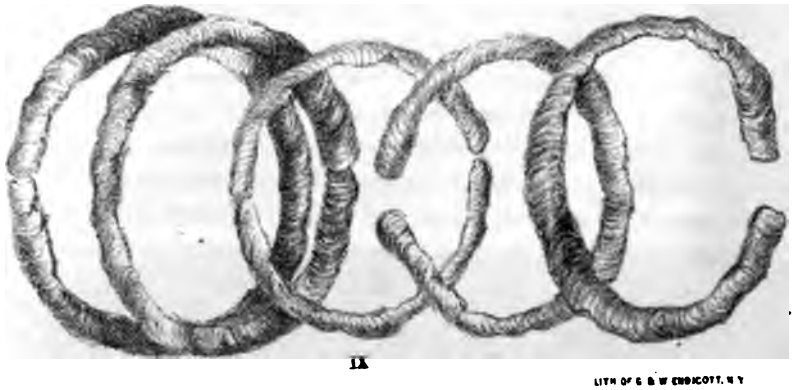


PLATE II





IX

LITH OF E. B. & W. ENDICOTT, N. Y.

or bands unequally hammered; these have been merely bent, so as to bring the extreme ends into contact, without soldering. They are a rude article, and evince very little skill, either in metallurgy or the art of the smith. The quality of the metal did not appear to me to be essentially different from the pieces of native copper found in small quantity in parts of the Mississippi valley. It is less fine than the large Ontonagon mass, which has recently been transferred to Washington. The size of the largest of these bands was $2\frac{8}{10}$ inches in diameter, and of the smallest $2\frac{1}{10}$ inches. This I find, by admeasurement, to be two-tenths less than my own arm above the elbow, and one-tenth less than it is at the wrist. This may be assumed to be the medium diameter of the arm of the Saxon race. It is admitted that the native races have afforded less muscular development than those of Europe. On the assumption that the inscription was made by the arm that bore these rings, and was entombed with it, there is no proof certainly from anatomy of a foreign origin, yet the conjecture of such origin may be entertained.

Antique Collar, or Nabekowágun. (Fig. II. Plate 1.) The relic which has most successfully baffled scrutiny, is that to which the term of gorget may be applied. It is manifestly one of the forms of those ancient badges of authority, to which, as a generic, the modern Algonquins apply the term Na-be-kow-á-gun, or collars. The word has a masculine import. The form, which is yoke-shaped, is antique, and the two orifices for suspending it around the neck sufficiently denote its use. The native tribes, from our first acquaintance with them, evinced their fondness for insignia of this kind, and have preserved it, indeed, to the present day. The modern medal is the result of a compliance on our part with this passion. The principal difficulty with respect to this antique gorget, has been to determine the character of its substance. Whether the article found at Grave Creek is organic, mineral, a composition or an oxyd, it was impossible, in the bad light of the

rotunda, to decide. It is white, heavy, easily cut, moist, and has very much the appearance and feel of certain oxyds. Perhaps a thin plate of one of the oxydable metals may still exist in its centre. It impressed me, as most resembling a carbonate of lead. It is figured in the plate. It is 6 inches in length, $1\frac{3}{10}$ in width, and $\frac{3}{10}$ in thickness.

Notice of several minor Mounds standing in a system of ancient circumvallation on the Grave Creek Flats, and of the antiquarian relics found in them.

Before any suggestions are attempted to be made of a general character, respecting the age of this tumulus, or the people who probably constructed it, topics on which but little can be advanced, it may be well to advert to other evidences existing in the immediate vicinity, of a degree of industrial labor, and a capacity for defence, which appear rather above those commonly ascribed to, or, at least, attained by the existing race of Red Men. This advantage, at least, will result from the prior consideration of surrounding objects, that it will enable us to resume the examination of this higher and crowning effort of their ancient labors, and of the remains of mortality entombed therein, with a full knowledge of cotemporary ruins.

The neighborhood of the mound, comprising the area between Great and Little Grave Creeks, and the Ohio shores in the opposite county of Belmont, afford indeed, a field of much antiquarian interest. The Flats, as before indicated, were finally settled about 1782, or just at the close of the American Revolution. This was, indeed, the era which opened the great WEST to emigration. They were among the earliest points settled. They were then covered with a dense forest. The soil on the upper plateau, which is the site of the large mound, is a fertile sandy alluvion, mixed

with carbonaceous matter, and has, for an uninterrupted succession of years, borne fine crops of Indian corn. The lower plateau, or river's bank, is argillaceous. No part of the *latter* appears to have been cultivated by the primitive inhabitants, or used in the construction of the mound.

Besides the great mound, which has been the prominent object of remark, there are several minor mounds, all situated on the upper plain. Not less than six of these are observable, either entire or by their vestiges, at this time. There is a group of three mounds located in close connection on the town plat of Elizabethtown. One of the larger of these has been wholly removed to procure sand for building; leaving, however, a depression to mark the spot where it stood. Another of the number, is partly undermined in the same way. A smaller one, bearing a summer house, is yet entire. Another mound which stood in a cornfield east of this group, has been nearly obliterated by the plough; and a fifth, N. W. of the Elizabethtown group, and situated near the bank of Little Grave Creek, also within the town plat, has been, to a great extent, removed. The sixth, situated on Dr. Sheppard's plantation, is still entire.

The original height of none of these secondary mounds probably exceeded 25 feet; the largest of them had a diameter of perhaps 150 feet. The effects of change have been so great, that it is difficult to attain accuracy in this particular. The whole of these mounds, of which the great tumulus may be regarded as occupying the relative situation of a citadel, were connected by ancient ditches and lines of circumvallation, forming a system. Traces of these lines may still be observed on the plain which is crossed by the road to Parr's Point, and at other places, but they have been so much levelled or obliterated by the plough, and by other means, that no satisfactory plan of the original figure of this extended station of residence and defence, can be executed. It was an irregu-

lar triangular area, having lines such as that from the great mound to Sheppard's, of a mile in length, and presenting a front on the second banks of the Ohio, namely, from the great mound to the small one on the banks of Little Grave Creek, (of which but little now remains,) of nearly three-fourths of a mile. These extensive lines included, doubtless, the entire area in cultivation, and thus gave protection to the families and others, who may be classed as field laborers.

It is apparent, that a considerable population must have dwelt here at an ancient period, who cultivated corn. Charred grains of this article were raised in my presence, from one of the mounds in the town plat of Elizabethtown, together with an implement of stone, and some very thick pieces of ancient pottery. The character of these smaller mounds resembles that of other structures of the kind which have been found at various points in the Ohio valley. The art of military defence the builders possessed, appears to have been rude and simple, yet evinces some skill and talent in the combination of circles and tangents. The works are such as were designed to resist rude besiegers, who, like themselves, had no weapons probably but the arrow, club and spear. No sword, battle-axe, or other metallic weapon has been found. It is indeed only in a limited number of the objects of civic art disclosed by these mounds, that we perceive any claim, in these antiquarian remains, in addition to that of the inscription, to higher consideration.

Figured Stone Sphere: Antique Globe. The most important discovery in the minor mounds, in its bearing on the inscription, is a globular stone, found in one of the Elizabethtown group, containing devices, apparently of a geographical character. Of this relic, for a plaster-cast of which I am indebted to Dr. Wills De Hass, the following is a drawing.

The stone, which is a sphere, measures $4\frac{8}{10}$ inches in circumference. The inscription lines are enclosed in a circle of $\frac{8}{10}$ths; they are accompanied by a single alphabetical sign. It is the Greek Delta, which is also the letter T, or D, in several of the ancient alphabets. This character is also the letter Tyr, in the Icelandic Runic, representing the god Tyr, or a bull. On the assumption that this inscription is geographical, it may be inquired whether it is a figure of the globe, denoting the divisions of land and water, or a minor portion of it. The ancients did not believe the world to have a spherical shape. Either the stone, therefore, is of an astronomical character, or is of a date subsequent to Copernicus, or it evinces that he was anticipated in the theory of convexity, by the ancient Americans.

Carved Ornamental Stone: Heraldic Record. (Fig. VI. Plate 1.) In some excavations made in Dr. Sheppard's mound, there was found a tabular piece of yellow sandstone, bearing devices in the free arabesque, or what it may be more appropriate to call the feather-style, which is so conspicuous on the monumental ruins of Central America, and Yucatan, as described by Messrs. Stephens and Catherwood. Of this object, an accurate figure is given in Fig. 6 of the accompanying lithographic plate.

Part of this stone had been broken off. In the drawing, the whole is restored, geometrically. It may be regarded perhaps as astrological and genealogical, and as such, a memorial, or species of arms of a distinguished person or family. Its interment with the individual entombed in the mound, would thus appear intelligible. There are no facts or materials, but those quoted, with which it can be, at present, compared.

Antique Tube, or Syphon: Telescopic Device. (Fig. III. Plate 1.) In the course of excavations made in the easternmost of the three mounds of the Elizabethtown group in 1842, and in 1843, several curious tubes of stone were disclosed, the precise object of which, has been the subject of various opinions. The longest of these tubes measures twelve inches, the shortest eight. Their shape and size will be better understood from the drawing. These enigmatical implements, of which three were found, have been carved by their makers out of a species of compact, blue and white mottled steatite. They correspond in all respects, except in length. They are skillfully cut and polished. The diameter of the tube externally, is $1\frac{4}{10}$ inches; the bore $\frac{4}{10}$ths. This calibre is continued till within $\frac{1}{2}$ths of an inch of the sight-end, when it diminishes to $\frac{3}{10}$ths. By placing the eye at this diminished point, the extraneous light is shut from the pupil, and distant objects are more clearly discerned. The effect is telescopic, and is the same which is known to be produced by directing the sight to the heavens, from the bottom of a well, an object which we now understand to have been secured by the Azteek and Mia races, in their astronomical observations, by constructing tubular chambers. The quality of the stone, like most of the magnesian species, is soft enough to be cut with a knife. It is evident that the circular lines observed in the calibre, have been produced by boring. The circular striæ of this process are plainly apparent. I learned by inquiry, that a quarry or locality of this species of rock, exists on the banks of Grave Creek, some four or five miles above the great mound. This establishes the fact that they were made *here*, and not brought from a distance. The degree of skill evinced by these curious instruments, is superior to that observed in the pipe carvings, and other evidences of North American Indian sculpture.

Rings of Porphyry. (Fig. I. Plate 1.) In the lithograph, two antique implements of yellow porphyry of various

size are represented. These implements of hard stone were taken from the same locality with the tubes, in one of the minor mounds. They differ strikingly in size, the one being $3\frac{6}{10}$ inches in diameter, the other $1\frac{3}{10}$ths, but are constructed of the same form, and were evidently for the same purpose. They consist of circular tablets, with a raised periphery, and with concave depressions, having a small orifice in the centre. They would seem to have been instruments used in some public game. War and sports had seasons peculiarly appropriated to them, by our aborigines. It is known that all the tribes devoted a part of their leisure to public amusements of an active character, in which the athletic young men of a village united, choosing sides, and playing under the supervision of the elders, or sachems. Evidences of this taste may be not unreasonably looked for, in the place of their monumental and buried remains. Such appear to have been the use of these porphyry rings, which have an orifice by which they could be lifted by rods, and flung to great distances.

Idol Worship. Not the least interesting object disclosed in this vicinity, is found in a curious idol of stone, which was ploughed up on a Mr. Taylor's farm, about eight miles below, and south of the Grave Creek Flats. The position is upon the elevated terrace land, bounding the Ohio river on its left or Virginian banks. This tangible evidence of idol worship, which has been heretofore thought *not* to have prevailed among the North American tribes, is now deposited in the mound. The following is a drawing of it in profile.

The material is, so far as could be judged in a bad light, a kind of sandstone or graywacke, of a blackish hue. The color is probably to be attributed to painting or staining at the time of its use. Is is quite rude, in the style of its sculpture, yet successfully depicts characteristic traits. Among the most remarkable of these, is a head transversely elongated with eyes set diagonally, in a manner which has been deemed peculiar to a certain type of the Tartar family. It also depicts the

crown-tuft, or scalp lock. The side view, shows an elongated chin, an aqueline nose, and a retreating forehead. Its height is 13 inches by a breadth of 6½. There are two small orifices in the back designed for the thumb and fingers to lift it by. These orifices communicate below, so as to admit a rope or thong for the apparent purpose of suspending it, to be carried on journeys. It was thus adapted to a people of *itinerating habits*. The entire number of these monumental evidences which have now been mentioned seratim, denote tribes possessed of considerable mechanical skill; they evince some knowledge of geometry, if not of astronomy. They had some knowledge of sculpture, as well as pottery. Their remains appear to tell us, at least so much of the story of their makers, as denote them to have been in full and fixed possession of the country, which they raised mounds and lines to guard and defend. That they were an active, warlike, athletic race, certainly hunters, and also semi-planters, who brought up their youth to forest sports, and devoted their leisure seasons in athletic games, designed to form active habits in the young, and give them a physical education suited to border life. So much may, without much risk, be affirmed.

Ruins of an ancient tower or look-out, built of rough stones, with notices of some traces of similar works at other points overlooking the Grave Creek and Ohio valleys.

It has been noticed, that the art of military defence denoted by the earth-works of this locality, was rude and simple, and such as tallied with the ancient remains generally found in the West. Perhaps it constitutes no objection to this remark, to add, that there are found here, the evidences or remains of several stations of observation, or watchtowers, if the term may be used, on the hills or bluffs encompassing this valley. The accompanying sketch, in pencil, depicts one of the most noted of these, so far as I have personally examined them. It is situated on Parr's Point, on the farm of a Mr. Michiltree, about four miles from the great mound. It consisted originally, of a round tower, of unknown height, built of rough, unhewn stone, laid without mortar, in the style of the cairns. This was commenced on a commanding point of land now overgrown with trees. To begin it, the ground had been excavated some depth below the surface, forming a circular chamber. About five or six feet of this subterranean part of the wall and chamber is still entire. The rest of the tower has fallen, partly within, but mostly without the circular depression, and now encumbers the spot to some extent, with rough stones. No such stones naturally exist, or had formerly existed, on other portions of this point or ridge of land. Those used in this work have, apparently, been carried up from a neighboring gorge, with no small amount of labor, if we suppose, as we must, that they were brought up by hand, and without the aid of animals. The position of this ruin is about four miles N. E. of the great mound. Were the surrounding trees felled, the entire Grave Creek Flats reaching to the banks of the Ohio would be in prospect. This I verified by

ascending a contiguous point from which the forest has been removed.

Another look-out was described to me, as existing at the angle of the Grave Creek hills, in the same geological range with those of the Ohio valley. This I did not visit, but I crossed the Ohio river into Belmont county, and ascended an eminence to see the remains of a third locality of this kind, at which, however, the evidences of construction were but slight, being rather vestiges, and these confined almost exclusively to a few heavy stones. These appeared to have been transported from the sides or bottom of the hill. It was not until I had returned from this latter excursion, and when my horse was at the door to convey me back to Wheeling, that I received an account of an ancient circular entrenchment, of an extensive character, on the summit of the crowning, or superior hill of the Belmont shore. This work was described to me by Col. Thomson, the proprietor of the land, as extensive, embracing many acres within the lines of circumvallation. It occupies, he informed me, the apex of the most elevated river hills, and commands the gorges which lead up to it. The trenches are described to be of considerable depth and well defined throughout. They disclose points of entrance or gateways. These gateways, or sally-ports, are defended by that very characteristic feature in the ancient Indian art of castrementation and intrenchment, that is to say, small mounds, or earthen propyli, such as are seen in the ancient works on the waters of the Scioto and the Muskingum.

Conjectures respecting the era of the erection of this Mound, and the character of the people who constructed it.

The preceding details might, perhaps, be better left to make their own impression, without further comment; yet, as there are some features in the opening and character of the mound, which have not been considered, the occasion may be

embraced to add one or two general suggestions. It may be well to state, in this connection, that the mound has only been bisected in three lines, two of which penetrate but half its diameter. Of a solid pyramid of earth of some two thousand five hundred yards, by far the largest area, remains undisturbed; and although it was natural to suppose that a perpendicular line from its apex to its base, would disclose the most important facts, yet there is abundant room, in its ample sides, for other disclosures.

Among the articles actually found, there was no treasure, properly so called—no ornament of silver or gold, which, if found, might have served to connect the builders with ancient inhabiters of the abandoned gold mine region of Georgia and the Carolinas, or with the ancient Toltecan or Aztec races. There were no vases, no pipes, no articles of pottery, except in the minor mounds. And, had it not been for the inscription, it might have been added to, or remained included, as merely one of the evidences of the mound-building propensity,—a very extraordinary and still unexplained evidence indeed, of labor by the ancient barbaric inhabitants of the Ohio and Mississippi valleys. Bold, populous and warlike tribes doubtless filled these valleys. Yet they appear to have been sui generis with the present race. Their passion for ornaments, as here evinced, and their fondness for sea-shells, either unmanufactured, or in the shape of beads and amulets, was a common trait with the red hunter, and presents no new feature. Ornaments of native copper were also of common use by the ancient and by the modern tribes. They had piled up here about two millions of cubic feet of earth, a very considerable labor for a wandering hunting population, without tools; but which, it is probable, was the result of slow accumulation extending through a long period. Still, it is the largest work of the kind, to which geological causes had not conduced by a pre-formation, north of the Gulf of Mexico. It is now known, as stated at the beginning of this notice, that such causes *had* n duced to the formation of several mounds or rather large

pyramid-shaped hills of the West, which the ingenuity of the native tribes had converted to mound purposes.

It was one of the results of the Grave Creek excavations, that the lowermost and deepest buried skeletons, were in the best state of preservation. The vault containing these skeletons, of which there were two, was found to have been sunk seven feet into the original soil, the curve of which is still distinctly marked by its compact and homogeneous character, and by a dark carbonaceous surface line. From the measurements before announced, these skeletons were consequently at the great depth of seventy feet below the surface, or apex of the mound. In this lower vault, there was nothing whatever found, besides these osseous remains, some shell-beads, and a kind of neck ornament; all denoting an earlier and ruder period.

Many bones of the skeletons at this depth were found so sound and entire, that one of the skeletons has been set up. This grim piece of ancient anatomy is fastened against the shaft of the rotunda and defended by a wire screen. The cranium impressed me as evincing a more than ordinary intellectual development. It has an uncommonly elongated chin. All the teeth are entire and present, and are perfect, with the exception of a caries on one of them. The following is a drawing of the skull.

The entire frame, which is set up, at about six feet, has been a little over-stretched, or too much allowance made for the foot bones, which are wanting, and an imperfect pelvis. The distance between the sockets of the thigh bones as it stands, is believed to be greater than is generally observed in males. The scapula are very thin, and the arm bones of strikingly small circumference for their length. The state and completeness of the

teeth denote no very advanced age. The shape and size of the bones present some anomalous features, in viewing this skeleton, which arise perhaps from the selection of parts of two sets of bones, a male and a female, to make up, as nearly as possible, one complete subject. I suspect this result. It is very desirable, in view of the noble skull, that some scientific anatomist should examine the frame, before it yields, as it must ere long, to final decay.

It is to the upper vault—the vault of the inscription, that the chief interest attaches. It is this part of this dusky mausoleum of a bygone race, that a voice addresses itself, as it were, to posterity. Every minute circumstance connected with it is therefore important. There were few artificial relics, it will be remembered, found with the lowermost skeletons. Between the time of the first and second interment, the visit to America of an individual, or individuals, having the use of the old rock alphabet of the west of Europe, appears to have occurred. With this inscription stone we have the sea shells, the mica from the Alleghanies, and other ornaments. In this time, the mound had been raised about seventeen feet above the crown of the lower vault. With the changes that now brought the inscribed stone into the Ohio valley, there had also been brought, either up the Mississippi valley, from the Gulf of Mexico, or from the Floridas or the West Indies, the cherished, bright, pale-yellow Marginella, which is not found, at this day, on the shores of the North Atlantic. There also came the prized conchs, from which beads and the antique bead wampum were manufactured, and the dazzling folia of the silvery mica, a mineral which is only found in primitive districts. The entire valley of the Ohio is secondary, and embraces the coal and iron formation. There are no primitive rocks due west of Grave Creek to the Rocky Mountains. South of west are the isolated formations of St. Francis, in Missouri, and of Washita, in Arkansas; but these are rather syenites, and yield no plates o mica. Northwest there is

nothing of the primary, until we approach the region of Granite Point, and the Porcupine Mounts of Lake Superior; and these are also barren of large plates of mica. The primitive formation crosses the Mississippi about one hundred and fifty miles above St. Anthony's Falls, but it is totally destitute of mica. We must indeed look to the southern Alleghanies for the original locality of this Grave Creek mica. All these ornaments, excepting a part of the beads only, and a single other ornament, were deposited with this individual enclosed in this superior vault. At this, or a subsequent time, the mound was still further raised about five and twenty or thirty feet, and was terminated, as we find it, by a level area of fifty feet across. It then presented, as it still does, the figure of a very broad-based truncated cone. It was doubtless somewhat higher originally, as the effects of settling are perceptible. It may be assumed to have reached an altitude of seventy-five feet. The superior position of the newer vault, exposed its contents more fully, however, to the effects of atmospheric action. The bones found at this elevation were so much decayed, that no attempt has been made to arrange them. They are exhibited to visitors at the mound, in a confused and broken mass, in which portions of the crania are visible, together with a full set of teeth.

The mode of the structure of this mound, as denoted by the changing color of the earth, and the almost total absence of other bones than those noticed in the vault, has been the subject of much speculation. It is generally thought, by visitors who have viewed the waved or mottled line of dark and lighter colored earth disclosed in the sides of the gallery, that bodies have been incinerated in the eastern manner. Such a practice, we may admit, is followed at this time by the Taculies* and a few of the tribes of the wide-spread Arctides, or Athapascas, north of the Ungigah pass of the Rocky Mountains. But we have no evidence that it was customary in the

* Vide Harmon's Travels.

WEST. Samples of the earth of the mound, of medium color, preserved in a flask, herewith exhibited, will afford some idea of its quality, and may hereafter be submitted to analysis. It has, as before indicated, a perceptibly sharp or alkaline odor. Perhaps this may arise, in part, from an ancient practice of many of the tribes, at least among the Algonquins, of lighting fires on the graves of their dead.*

But what shall be said of the character of the people who erected the mounds, and who have left entombed, in the WEST and SOUTHWEST, the various evidences of Art, which have been from time to time noticed? Any thing that tends to dispel the mystery which hangs over these ruins may be considered to advance the inquiry. And while, in this respect, the discovery of the inscription tends rather to thicken than to dispel it, yet, in other features, we perceive a general correspondence in the character and structure of the Grave Creek tumuli, large and small, with those elsewhere noticed in the Ohio valley.

We think the subject susceptible of a twofold consideration. To reconcile the fact, of the former existence, on this continent, of diverse arts, manners and customs, as shown in its ruins and factitious remains, we may well imagine two distinct eras of population, and suppose that this population originated *in*, and proceeded *from*, distinct, separate, and opposite parts of the globe. There are in our antiquities, and in ancient traditions, so far as these can be employed, evidences, we think, that there was a period of adventure and migration to this continent, having its impulse from the East, towards the *Atlantic* coasts—that it proceeded from the *European* coasts, in the infancy of navigation, and was borne hither on the Western breeze. That these early visitors consisted of comparatively *few* in number, and brought the arts of the rude and semi-barbarous age in which they lived. Such evidences exist, to some degree, in the character and art of cer-

* Algic Researches.

tain kinds of pottery, and in certain works of military defence, of a limited character, and ruins of planned towns, found in a few places in Florida, Tennessee, and other sections, extending northwardly through the Mississippi valley and up the Ohio. Scandinavian traditions, which, if admitted as fully as history can consistently do, are confined to the higher northern latitudes. But whatever was the period or character of this adventure, it was evidently limited in numbers, and went down, either by the sword or amalgamation in the more powerful native races. One of the strongest evidences of such an intrusive type of civilization on the continent, is the alphabetic inscription, which we have been considering. It may be viewed in connection with the Floridian pottery, the Marietta ruins, and other antique features of the western country of a kindred or an anomalous type. It is far easier to account for these discoveries as vestiges of ancient European art, than to suppose our northern stocks to have declined from pre-existing civilization. This would, at least, account for the intermingling of two diverse types of art at the same spots, such as we have been considering, without driving the inquirer to the necessity of admitting arts, in the present nomadic Red Race, which it is merely gratuitous to concede that they possessed. And we may thus separate the vestiges of European from those of Asiatic or Indian art.

The personal ornaments disclosed by the several mounds here and elsewhere in the West, do not denote a people differing, essentially, in their manners and customs, from the existing tribes, due allowance being made for the disuse by the latter of certain articles of rude manufacture, which have long been supplanted by European fabrics. They have given up, and indeed forgotten, the arts of pottery, and of making shell beads, hornstone darts and arrow-heads, stone pestles, (their succedaneum for the millstone,) and porphyry axes, and fleshing instruments. The same may be said of several antique forms of collars, and neck and breast ornaments;—articles

which long have been supplanted by the silver medal and gorget.

All the Atlantic and sea coast tribes formerly manufactured shell beads and other personal ornaments. They belong to the very earliest periods of our acquaintance with them. Such articles were always highly valued, and those made of shells possessed the character of money on the settlement of the country, and were regarded as the standard of value. All payments, tributes, and commutations for misdemeanors and crimes, were made in it. It furnished a source of commerce in itself, between the sea-board and interior tribes, and was the common medium of exchange. The same remark may be made of entire shells, large and small, which in all ages of the barbaric period of Indian history have been highly prized. Their occurrence here, entombed with the dead, is not therefore uncommon. It is only the foreign idea of "ivory," improperly applied to it, that has imparted peculiar interest to these Grave Creek beads. All that we can legitimately infer, with respect to the occurrence of the shell beads here is, that the species have been brought from positions more southerly.

The occurrence of metallic bracelets of copper, is neither uncommon, nor indicative of the course of migration of the bands. Native copper is a product, which is not confined to latitude, and was extensively found over the surface of the regions west and north, at early periods. The size of the wristlets alluded to above, may be thought to be rather indicative of the attenuated muscular organization of the Indian, than of the European arm and wrist. There are some evidences of unusual military energy and foresight in the vestiges of watch towers, but less than usual in the circumvallations and apparent works of defence. The Great Mound itself, speaks of a capacity for labor and design, but is not, in this respect, peculiar. We can less readily reconcile to the common Indian manners and customs, the apparently telescopic tubes, and the small artificial globe, with devices. We may dispose of

the stone idol, as of Asiatic and derivative-Indian origin, as well as of the porphyry instruments used at public games. It is impossible indeed, after surveying all the evidences of former occupancy existing here, to bring the mind to the conclusion, that the tribes differed generically from the existing race of Red Men. Captivity or hereditary descent, most probably, brought the inscribed stone, or the art of its inscription, into the Ohio valley. If the latter, then we may reasonably look for other examples of it in our western mounds. Such a relic, if possessed by a captive, or transmitted in the line of blood, would necessarily be invested by the native race with something like talismanic power. And, however derived, nothing appears more clearly indicative of the origin of the mound with the Red Race, than the interment of this curious relic with the cacique or sachem who appears with so much ostentation to have been buried in the superior vault. The very act of the interment of it is the best proof that the bodies were committed to the earth by Indian and not European hands.

Eras for the chronology of the mound, may be deduced in various ways.

Live oak trees growing on some of the fifty feet diameter and smaller low mounds of Florida, on the Appalachicola, and other places on the Gulf, denote that the articles of compact red pottery disinterred from those mounds have been buried in those positions some six hundred years. The oaks of the Grave Creek tumulus above described, indicate a period of about five hundred years. The one denotes the latter part of the 12th, the other of the 13th century, as the general era of these tumuli. The forest growth of Grave Creek Mound indicates the year 1338 as the origin of the mound. In 1330, a great pestilence broke out in China and Tartary, swept over India, and soon entered Europe, when its course from east to west resembled that of the cholera of 1832, which was not stayed by the eastern borders of the

Atlantic, but crossed its waves to America. May we not suppose a similar career to have attended the pestilence of 1330, and if so, entire bands of the Red Race may have been swept away and buried in the western burrows and tumuli? We note this event in the history of India to show the importance, and at the same time practicability, of establishing chronological dates, without attaching to the suggestion itself conclusive weight. If we knew that our eldest mounds had been erected to cover the victims of a pestilence, such a fact would be invested with vitality.

Of the several eras of conquest of the Red Race in the Mississippi valley, there are very slender traditions. Their monuments, so to call the vestiges of their occupancy, are data which have rather served to puzzle than to en lighten us. The best conjectures we can offer on the general condition of these remains, lead us to believe that the fierceness of their ancient contests, when they had both greater numbers and means of subsistence, originated a degree of vigor and forecast, which eventuated in arts and means of defence which they have since lost.

The traditions of the Red Race in this quarter affirm that a long and severe contest, extending through a series of years, existed in the Ohio and Mississippi valleys, between the ancient Appalachians or Alleghanians, and the ancestors of the yet existing stocks of the Algonquins and Iroquois. Tradition informs us that these two latter stocks, who are of diverse language, came from the direction of the southwest, and west, at an era subsequent to the Alleghanians and Appallachians, and their allies. They found the latter already east of the Mississippi, and seated in the great range which perpetuates their name. They united and drove them down the Ohio, after which the conquerors proceeded towards the Atlantic coast and the lakes, and occupied the country where the Europeans found them. We are impressed with the belief that the common trenches, fortifications and defenced mounds

of the Ohio valley, are of the era of these wars. That it was a war of Red man against Red man, in which numbers and fortitude at length decided for the Northern tribes. That they built watch-towers, and dug trenches, and put up palisades, would not seem to have been an effort beyond their period.

Such a war was, in truth, if we scrutinize our history, still in progress on the first settlement of the country. It is known that the Iroquois and Lenapean tribes carried on a severe war against the tribes in the southern Alleghanies, extending to the Carolinas, so late as the era of the first settlement of Pennsylvania—that they were the great enemies of the Catabas and Muscogees, and that they finally rescued from the grasp of this people and their allies the remnants of the Tuscaroras—a tribe, who were probably a lingering or straggling band of their own kindred, left behind on their original migration from the southwest.

Viewed in this light, a large part of these earthen ruins of the West, are disrobed, in a measure, of their mysterious character, and we are thus aided in the consideration and arrangement of the remainder.

ARTICLE IV.

ON THE DISCOVERIES OF

HIMYARITIC INSCRIPTIONS IN SOUTHERN ARABIA,

AND THE ATTEMPTS MADE TO DECIPHER THEM.

BY WILLIAM W. TURNER,

Hebrew Instructor in the Union Theological Seminary, New-York.

HIMYARITIC INSCRIPTIONS

IN SOUTHERN ARABIA.*

THE renewed interest which was given to the investigations of the learned into the lost language and writing of the Himyarites by the unexpected discoveries made ten years ago of inscriptions in southern Arabia, has continued to increase instead of diminishing, in consequence of a number of publications on the subject which several eminent scholars and travellers have since presented to the world from time to time. The immediate occasion of the present article has been the generous loan made to me of most of these publications by a member of this society, my highly esteemed and respected friend, Dr. Edward Robinson. Its chief design, as intimated in the title, is to furnish an account of the principal facts connected with the discovery of the inscriptions, and of the inter-

* Although several articles have recently appeared in the British periodicals relative to this subject, the Society have still concluded to publish the following paper, the substance of which was read before them on the 9th of November, 1844. The articles alluded to have an almost exclusive reference to Mr. Forster's book; and the only one (that in the English Review for March, 1845) which undertakes to state a few of Rödiger's views, inadvertently misrepresents them. It is certainly desirable that the English language should possess a more satisfactory account of what has really been effected towards elucidating the venerable monuments which English energy and enterprise have brought to light.

esting results, scanty though they be, which have already been obtained by the attempts made to decipher them. I begin with a brief account of the

Kingdom of the Himyarites.

The Himyarites (بنى حمير) were once a numerous and opulent people who inhabited the southern province of Arabia, extending from Yemen on the west to 'Omân on the east, called Hadramaut (حضرموت); a region celebrated throughout antiquity for its rare and valuable productions, and especially as being the only country that produced the costly frankincense with which the temples of the Hebrews, Greeks, and Romans were supplied. The skill and labor employed by this people in the pursuits of agriculture and the irrigation of their lands, rendered their country a scene of fruitfulness and beauty which its present generally sterile aspect (at least as far as we are acquainted with it) renders almost incredible. But native productions were by no means their only source of wealth: Hadramaut lay in the track of the commerce between India and Europe; and this commerce, of which 'Aden (عدن) was the emporium, passed through their own hands and contributed to give rise to those marvellous reports of the riches and prosperity of south-western Arabia which won for it the title of Arabia Felix.* A few facts and hints respecting this people are found scattered through the pages of Greek and Arabian writers; but all that we have in the shape of history properly so called consists of little more than an inaccurate and defective list of their rulers, and contradictory accounts of a few incidents that took place during the more than 2000 years of their existence as a nation.

The Arabian writers agree that the first king who migrated to Yemen after the confusion of tongues was *Kahtân*

* See *Bochart*, Geographia Sacra, P. 1. lib. 2. cap. 26. *Vincent*, Periplus of the Erythrean Sea, p. 317.

(قحطان), the Joktan (יָקְטָן) of Scripture, whose genealogy, as given in Genesis chap. 10, is as follows: Shem, Arphaxad, Salah, Eber, Joktan. One of Joktan's sons is there called Hazarmaveth (חֲצַרְמָוֶת i. q. Arab. Hadramaut), the ancient name of the country; and another *Sheba* (שְׁבָא, Arab. سبا *Sabá*), a name often given to this people in Scripture, whence the classic name Sabæi or Sabeans. The Arabians however do not make Sabá to be the son of Ḳaḥtán, but the third in descent from him; his genealogy according to them is Ḳaḥtán, Ya'reb, Yashḥob, Sabá. One of the many sons of Sabá was *Himyar* (حمير), who succeeded his father on the throne, and from whom the people are also frequently called Himyarites or Hamyarites, the Homerites (*Ὁμηρῖται*) of the Greeks and Romans.*

From Ḥimyar to *Balḳis* (بلقيس), who is said to have been the Queen of Sheba celebrated for her visit (and, as the Arabs have it, her subsequent marriage) to king Solomon, the Arabs enumerate eighteen Himyaritic sovereigns, whose history however is almost an entire blank. To the name of this queen many ridiculous fables are attached, with which, although some grains of truth may lie hid in them, we have here nothing to do. The three kings (called Tobba's) who succeeded Balḳis are said to have been *Nâshir an-Ni'am, Shamar*

* The discrepancy between these two names, Himyarites and Homerites, has given rise to a good deal of controversy. That the former is the true pronunciation is expressly declared by the Arabs themselves (see *Ludolf*, Commentarius, p. 66 note); and in its correctness modern scholars now generally acquiesce. Ludolf, it is true, prefers the pronunciation of the Greeks: because, he says, they heard it from the people themselves, whereas the Arabs only receive it through tradition; or, as he states it, having forgotten the true pronunciation, they have invented one that is erroneous. But surely it is more probable that distant foreigners like the Greeks, who knew little of the people except by hearsay, should corrupt a Shemitish name into one familiar to themselves, a practice to which they were very prone, than that the Arabs should so disfigure the appellation of one of their own most celebrated tribes. Moreover, Prof. Rödiger has shown (Wellsted's Reisen, vol. i. p. 303, note) that the pronunciation Himyar is indisputably as old as the most ancient Arabic writings extant.

Yar'esh, and *Abúmálek*. To them are attributed various military expeditions to the East and West. Shamar is said to have given his name to the city of Samarkand, built by him on the ruins of the capital of the country, which he had destroyed. Some say that he perished for want of water while crossing a vast desert in an expedition against the emperor of China.* His son Abúmálek died on an expedition into Africa. Under the next king Akran (الاكرن), in the first or second century of the Christian era (for it seems impossible to come any nearer to the truth), an event occurred which is famous in the annals of Arabia, and is considered as almost the first on which any great reliance can be placed. This was the celebrated *Sail el-'Arem* (سيل العرم) or Flood of the Mound. In order to obtain a sufficient and constant supply of water for the purposes of irrigation, a huge dam had been constructed across the valley a short distance above the capital city Sabá or Máreb.† By this means the water of a number of transient streams was collected into a sort of artificial lake, from which it was distributed through numerous channels to the surrounding fields and gardens, "making the wilderness to blossom like the rose." The vivid and romantic descriptions which are given of this paradisiacal region by the Arabian poets have

* The truth of this account seems to be corroborated by a curious statement made by an Arabian traveller, Abu Dolef, who lived in the beginning of the 10th century. He says, "We then came to a place called el-Kalíb; where there are wandering Arabs, who still trace their descent from those who remained here after the expedition undertaken by the Tobba' against the countries of Ṣín (China). . . . They speak the old Arabic language, and understand no other; they also write with *Himyaritic characters*, and are unacquainted with our writing. They worship idols. Their king is of a certain family, who alone can make any claims to the throne. . . . . We spent a whole month in travelling through this land, and found ourselves in constant fear and exposed to manifold dangers." Wellsted's Reisen. ed. Rödiger, vol. 2, p. 367.

† The *Mariaba* of Pliny. This famous city was called Sabá, after its founder. The name Máreb (مارب), by which it was also called, as Abulfeda expressly states, is considered by De Sacy to have been given originally to the castle of Sabá; or else, says he, we may adopt the opinion of Pliny, who says the word signifies "dominus omnium, i. e. metropolis."

caused some to regard the whole account of its wonderful fertility and beauty as apocryphal; but certainly few will feel disposed to do so who have read the highly curious and interesting description given by Lieut. Wellsted of the Arabian oases which are created by simply conducting rills of water to a spot from which the sandy surface has been pared away. This dam however, which according to some was erected by queen Balkis, and according to others was constructed by Sabá himself and repaired by Balkis, was one night suddenly carried away in consequence of some accident or by the gradual undermining force of the water, in the reign of king Akran, as above mentioned. The consequence was, that the city was destroyed and this once fertile region laid utterly waste.

The throne of Himyar lasted about four hundred years after this catastrophe. The details of this latter period are somewhat more circumstantial than that preceding it, although still embellished with fable; and the chronology, especially in the latter reigns, is a good deal more to be depended upon. As before, I shall mention only those rulers of whom something is known that seems worthy of remark. The fourth of these kings, As'ad Abûkarb (اسعد ابوكرب), who appears to have ascended the throne A. D. 220, is celebrated as a ruthless conqueror, and is also said to have extended his marauding expeditions as far as China. Up to this time the Himyarites were idolators and worshippers of the heavenly host. At 'Aden they had a temple to the sun, and at Ṣan'á (صنعا) one to the planet Venus. 'Abd Kulál (عبد كلال), who came to the throne A. D. 273, is said to have secretly embraced Christianity, which was beginning to be spread throughout Arabia by the many Christians who were now compelled to flee into remote parts of the earth, to avoid the persecution of the Roman emperors. The banishment of the Jews from Judea under Hadrian, had previously caused many of them to seek refuge in the Hejaz, where they too had gained many converts from paganism. Tobba' el-Aṣghar (تبّع الاصغر), successor of

'Abd Kulál, in an expedition made by him against Mecca and Medina, became acquainted with some of the Jewish rabbis there residing. The result was, that renouncing the idolatry of his ancestors, he embraced with eagerness the Jewish faith, and carried back with him a number of his new friends to his own country, where he charged them with offices of trust and honor. After the death of Morthed (مرثد), in A. D. 345, the kingdom of the Himyarites is said to have been broken up into a number of petty principalities. Dhú Nowás (ذو نواس), who ascended the throne A. D. 480, after slaying with his own hand the tyrant who preceded him, was excessively bigoted in his attachment to Judaism and in his aversion to those who professed a creed different from his own—a state of feeling, by the way, which is not exclusively confined to ancient times. He led an expedition against the inhabitants of Nejrán (نجران), who had become converts to the Christian faith; and on their refusing to adopt his own religion, he is said to have put nearly twenty thousand of them to death. Caleb, the Negus (king) of Abyssinia, being informed of this transaction by a fugitive from the slaughter, collected a large army and went over to avenge the cause of his Christian brethren. Dhú Nowás was worsted and put to flight in a pitched battle near 'Aden, where the Abyssinian monarch had landed, and cast himself into the sea. This took place in the year 527 of our era. With Dhú Nowás the kingdom of Himyar was brought to a close, and Yemen was made a province of Abyssinia.*

This brief statement contains the outlines of nearly all that is known of the once famous kingdom of the Himyarites; and which, for the meagreness of its details and the uncertainty of its chronology, rivals the history of ancient Mexico itself. It is the desire to fill up in some measure, if possible, this blank in the annals of an interesting portion of our race,

* The whole subject of Himyaritic chronology is discussed and the opinions of different authors examined, especially those of Reiske and De Sacy, by *Johannsen*, in his Historia Jemanæ, pp. 39—100.

which has long caused the attention of scholars and travellers to be directed with eagerness to the discovery of those ancient Himyaritic inscriptions of which Arabian authors make mention, and from which alone any reliable information can be expected. Of the endeavors made to discover these inscriptions, and of the success that has of late attended them, it is now my purpose to give a short account.

Discovery of Inscriptions.

Many Arabian authors speak of the Himyaritic writing and of Himyaritic inscriptions; and the alphabet said to be employed in them is given in several Arabic and Persian MSS. preserved in the libraries of Europe. The following general description of them, extracted from the historian Makrízi, is furnished by De Sacy in his Mémoire sur l'Origine et les anciens Monumens de la Littérature parmi les Arabes, 1805. "They formed this writing," says he, "by cutting it into the rocks, or by carving it on stones which they inserted into buildings. Most frequently the writing was cut in deep, when it contained the date of an important event, or the commemoration of an important matter, or information that might be useful, or some glorious deed, the remembrance of which they desired to perpetuate."* The alphabets, however, which are contained in the above-mentioned manuscripts, exhibit such discrepancies among themselves, that scholars have until very recently been in doubt as to which, if indeed any of them, were to be regarded as correct. This discrepancy, over and above the usual corruptions introduced by copyists, appears now to be partly owing to the fact that under the general name *Musnad* (المسند), lit. propped-up, i. e. *perpen-*

* I translate from Gesenius über die Himjar. Sprache u. Schrift, note to p. 11, not having access to the original.

dicular writing,* they also comprised other ancient modes of writing formed of separate upright characters, as for instance the Greek inscriptions at Alexandria and those in the Punic language on the ruins of Carthage.

It is well known that Niebuhr when in Arabia (in 1762 and '3) directed his attention to this subject; but unfortunately his search for inscriptions was not rewarded with success. He indeed heard that inscriptions were to be met with in several places, but saw none except on the following occasion. "A Hollander," says he, "who had turned Mahommedan, showed me just before my departure from Mokha an inscription in an entirely unknown alphabet, which he had copied in a village (if I mistake not) in the district Belâd An's. I do not doubt therefore but that in the hilly region of Yemen, and especially between Taæs, Sanâ, and Tehâma, inscriptions in the Hamyaritic character may still be met with. But since, at the very time when the before-mentioned Hollander showed me his copy, I lay very ill of a violent fever, I had more occasion to prepare myself for death than to be collecting old unknown inscriptions; and consequently I neglected the opportunity of copying those which he showed me."† The disappointment felt and expressed by scholars on his return to Europe at his failure in this respect, proved a lasting source of chagrin to this zealous promoter of science through his whole future life.

His successor, Seetzen, was somewhat more fortunate. While in Yemen, in the year 1810, he made many inquiries on the subject. After much fruitless search he directed his steps to the ruins of Ḍafâr, about twelve miles south of Yerim, a place in which, as Niebuhr had heard, inscriptions were to be found which neither Jews nor Mahommedans were able to read. Here Seetzen had the good hap to discover three

* Different explanations are given of this term, but the above is probably the correct one. See Zeitschrift für die Kunde des Morgenlandes, vol. 1, p. 339.

† Beschreibung von Arabien, p. 94.

inscriptions. The stone on which one of them was cut he bought for a few paras; the second he copied; but the third was built into the wall of a house at such a height that he could not make out the characters. In the village of Mankat, four miles from Ḍafâr, he found five other inscriptions, all of them built into the wall of the mosk. Two of them he copied; the remainder were beyond the reach of the eye. Four of these inscriptions, he says, were cut in raised characters on white marble, "and were executed with as much care and skill as is to be found even among Greek and Roman inscriptions." But what struck him as singular was, that the largest of them (which he did not copy) appeared to depend from a horizontal line, somewhat in the manner of the Devanagari character. Again, speaking of the one he bought at Ḍafâr, and which he carried with him to Mokha, where he carefully copied it at his leisure, he says, "This inscription is *sunk in* (vertieft), and is executed with the same skill as those in bas-relief." On examination, he found in it "many wedge-shaped characters," so that it struck him as bearing a relation to the Persepolitan writing. Furthermore he observed in it "some hieroglyphics representing *human feet.*" These appeared to him to be "*clothed;*" and as in Yemen no covering is worn on the feet, he hence concluded that the Himyaritic writing had a more northern origin. But it turns out that these appearances, and consequently the reasonings founded upon them, arose from an unfortunate and almost ludicrous error. It is now evident, from the knowledge since obtained and from a careful examination of Seetzen's copy of this inscription, that what he mistook for the characters of the inscription were in reality no other than the sunken *spaces between the letters!* What led him into this error was doubtless the fact that the stone was cut away only in the line of the letters, while between each row it was left at the same height with the characters themselves. These Himyaritic inscriptions, the first ever discovered in modern times, were given to the

world shortly after his return;* but it is not to be wondered at that the singular error made with respect to this monument, together with the very imperfect manner in which the others had been copied, rendered all attempts to decipher them abortive without the aid of further materials. For a series of years the investigation remained at this point. In the meantime a variety of hypotheses were advocated, most of which were sufficiently wide of the mark. Some adopted Seetzen's idea of the Indian, and others that of the Persepolitan origin of the Himyaritic character; while others, relying on the accounts furnished by Arab writers, were of opinion that it closely resembled the Ethiopic writing.

At length the period arrived when these doubts were to be put at rest, by the discoveries of the active and enterprising Lieut. Wellsted, in the years 1834 and 1835. The occasion of these discoveries was as follows: In the year 1830 the British East India Company despatched two of their vessels, the Benares and the Palinurus, to complete the survey of the Red Sea, preparatory to establishing a steam communication between India and Europe. Towards the close of this arduous service, while the expedition was engaged in exploring the southern coast of Arabia, Lieut. J. R. Wellsted, of the Palinurus, made, in company with some of his brother officers, two excursions from different points of the coast, into the interior of the country, in search of ancient remains; nor were their exertions unrewarded. They found, about 70 miles to the westward of Makalla, in lat. 13° 59′ 20″ N., and long. 48° 24′ 30″ E. from Greenwich, a steep rocky promontory, near 500 feet high, which is joined to the mainland by a low sandy isthmus, and is called, from its black appearance, *Hisn Ghoráb*, or Raven Castle. At the back of this hill lie "the ruins of numerous houses, walls, and towers;" and from these a path cut in the face of the cliff in a zig-zag direction, leads to the ruins of a city on the summit, which are discernible far

* In the second volume of the Fundgruben des Orients.

out at sea. As they ascended the rock, at about one third of its height from the top, the party were repaid for their toil by discovering some inscriptions. They consisted of one of ten lines (the longest which has yet been made known), and another of two, cut into the smooth face of the cliff. Another, consisting of a few words, was found "on a small detached rock on the summit of the hill." "The characters are 2½ inches in length, and executed with much care and regularity. To avoid the possibility of omission or error, three separate copies were taken by different individuals."* These discoveries were made in May, 1834, and were published the same year in the Journal of the Asiatic Society of Bengal.

In the month of April of the following year, while pursuing their survey some distance to the westward of Hisn Ghoráb, viz. at the cape called Rás el-Asída, in lat. 13° 57′ N., and long. 48° 15′ 20″ E., intelligence was brought them by the Bedwins, "that extensive ruins, which they described as having been erected by infidels, and of great antiquity, were to be found at some distance from the coast." Lieut. Wellsted started with midshipman since Lieut. Cruttenden, belonging to the same ship, and on the first of May arrived at the ruins, which are about 65 miles from where they landed in a N. N. W. direction. "The hill upon which the ruins are situated stands out in the centre of the valley, and divides a stream, which passes during floods on each side of it. It is nearly 800 yards in length, and about 350 yards at its extreme breadth. The direction of its greatest length is from east to west. Crossing diagonally there is a narrow valley, dividing it into two nearly equal portions, which swell into an oval form. About a third of the height from its base, a massive wall, averaging in those places where it remains entire, from 30 to 40 feet in height, is carried completely round the eminence, and flanked by square towers erected at equal distances. There are but two entrances, situated north and south from

* That is, Mr. Wellsted, Mr. Cruttenden, and Dr. Hulton.

each other, at the termination of the valley. The name of the place is Naḳab el-Ḥajar." Within one of these entrances an inscription was found. It is "executed with extreme care in two horizontal lines on the smooth face of the stones of the building, the letters being 8* inches long." The account of this discovery first appeared in the Journal of the Geographical Society of London, Vol. VII. (1837.)†

The finding of these inscriptions forms an epoch in the history of this investigation. Here at last documents were brought to light of sufficient length and copied with sufficient exactness to settle at once several interesting questions connected with Himyaritic inscriptions, and to render their future complete elucidation, with the aid of such additional discoveries of a like character as they gave reason to hope for, little less than certain. Copies of them were sent to Gesenius in Halle, and came to hand in the year 1837. That distinguished paleographer at once and without any further help than what the inscriptions themselves afforded him, succeeded in determining a portion of the alphabet and also in reading several words in the large inscription, and among them in the ninth line the phrase מלך חמירם *King of the Himyarites*.‡ These inscriptions were communicated by Gesenius to his friend and colleague Prof. E. Rödiger, who immediately entered upon a laborious examination of the subject. The first fruit of these studies was an article published the same year (1837) in the first volume of the Zeitschrift für die Kunde des Morgenlandes, entitled a "Notiz über die Himjaritische Schrift;" in which he made known two Musnad alphabets taken from MSS. in the Berlin library, and established their correctness in the main, partly on paleographic grounds and partly from a com-

* Probably an error of transcription or of the press for 3. Cruttenden gives them at 2½ in. long.

† Both this and the preceding paper are reprinted in Travels in Arabia by Lieut. J. R. Wellsted, 2 vols. London, 1838.

‡ See Lond. Geographical Journal, Vol. VII.

parison of them with the letters of the inscriptions.* He showed that the words of these inscriptions were separated from each other by perpendicular strokes; he proved the erroneousness of the opinion, which, resting on the authority of De Sacy, had become general, that the Himyaritic like the Ethiopic read from left to right; and he established the fact that the Wellsted inscriptions were identical with the Himyaritic writing often mentioned by Arabian authors. Starting from these well ascertained principles, he next undertook to decipher the inscriptions; and he succeeded in making out a number of single words and even of short phrases, especially in the larger one. In the course of the following year (1838) several publications appeared which furnished additional documents to exercise the ingenuity of the learned.

The praiseworthy zeal for science beyond the limits of mere professional duties which led to the interesting discoveries of the late Lieut. Wellsted, was shared in by other members of the expedition to which he was attached. A series of inscriptions, twenty-two in number, were made known by Dr. J. Hulton, the surgeon of the Palinurus. They were discovered in two places, not far from each other, on the southern coast of Arabia, to the east of Makalla. Dr. Hulton reached these places in two excursions which he made from on board his vessel, in company with Mr. J. Smith and Lieut. J. P. Sanders. Part of the inscriptions they found in a spacious cave half-way up a hill to which they give the name Jebel 'Aledma, near the ruined town of Hiṣn el-Meimeli, in about 15° N. lat. and 50° 15′ E. of Greenwich. On the sides of this cave, wherever a smooth place offered itself, traces of inscriptions were to be seen; these were not cut or scratched in, but were drawn, most of them in red and some in black paint. Some other inscriptions,

* In the following number of the same periodical, published in the same year, Prof. Ewald inserted with remarks a short extract from a MS. in the British Museum, containing a copy of an inscription of only seven characters, which he assumed to be Himyaritic. But this, as Gesenius has shown, is, to say the least, very doubtful.

also drawn in red paint, were found by them in a second excursion, in a cave about half a degree of longitude further to the east, after crossing the Wádi Sheikháwi. This cave was in the side of a mountain, at a height of about fifteen hundred feet.

While the Palinurus was employed at Mokha in making a plan of the roadstead, Mr. Chas. J. Cruttenden in company with Dr. Hulton made a journey to Ṣan'á, where they discovered four other inscriptions. "These inscriptions," says Mr. Cruttenden, "were found in the neighborhood of the most ancient part of Ṣan'á, near the foot of Dár eṭ-Ṭawáshé, or the Abode of the Eunuchs. It is the eastern extremity of the town, and in former days was the part appropriated to the Jews. The letters are about 2½ inches long; three of the inscriptions are in relief, and the fourth is cut into the marble." "The longest inscription," he says, "was on a slab of white marble, and, when we saw it, served to cover a hole in the roof of a mosque. A bribe of a dollar had a magical effect on the scruples of a servant, and the stone was brought to our lodgings that night to be copied, and carefully replaced before daylight. The Jewish workers in gold assured us that frequently square gold coins were brought to Ṣan'á by the shepherds of Máreb for sale; and a Banian merchant corroborated this account, adding also that jewels, particularly pearls, are found there, usually after heavy rains, when the people closely search the water-courses, and generally find something to repay them for their trouble. In the Imam's garden I one day found a marble head, and on inquiry learned that this also came from Máreb. To my great mortification, I was told that the figure arrived at Ṣan'á perfect, but was immediately broken by order of the Imam, as a relic of ancient idolatry, and I was unable to find the other parts of the statue; the head however I secured, after some demur on the part of the gardener, and brought it to England."* They were informed

* Journal of the Royal Geogr. Soc. of London, Vol. VIII.

moreover by several of the principal merchants of San'á that these stones had all been brought from Máreb, the ancient metropolis of the Sabeans, the region around which is still called by the natives *Arḍ es-Sabá* (ارض السبا), the Land of Sabá. They were told that, although Máreb lies two long days journey distant (to the N. E.) from San'á, it was less expensive to bring these ready-cut stones from Máreb, where they were found in abundance, than to prepare them in San'á. Hearing so much about Máreb, they determined to go there, and made arrangements for that purpose. But the Imam of San'á, becoming suspicious of their proceedings, refused his consent. Disappointment and anxiety so affected Dr. Hulton's health, that the party were obliged to give up all thoughts of further investigations, and to return to the vessel as soon as possible. Shortly after reaching Mokha, Dr. Hulton died.

The last mentioned inscriptions were made known to Europe in the year 1838: those of Dr. Hulton being published in the Journal of the Asiatic Society of London, No. IX.; and those of Mr. Cruttenden, in the Journal of the Royal Geogr. Society, Vol. VIII. These discoveries, together with M. Fresnel's papers on the *Ehkíli*, or modern Himyaritic, which appeared in the same year (and of which more in the sequel), gave a new interest and impulse to the investigations in which Profs. Gesenius and Rödiger had engaged. In the year 1841, Gesenius communicated to the Allgemeine Literatur-Zeitung for July, an article, "Ueber die Himjaritische Sprache und Schrift," in which he gave to the world the results of M. Fresnel's investigations into the Ehkíli, as well as of his own labors in deciphering the inscriptions themselves. Shortly after, namely in October of the same year, Prof. Rödiger published his "Versuch über die Himjaritischen Schriftmonumente," a small volume of 52 pages. He prefixed to it an introduction of 18 pages, addressed to Gesenius, in which he successfully refuted a number of the positions which that eminent scholar had taken up.

The year following (1842), he published a German translation of Wellsted's Travels, enriched with a great number of learned notes, and containing at the end an Excursus of 60 pages, on the Himyaritic inscriptions. Here, besides giving a resumé of the results at which he had arrived in the "Versuch," he carries the investigation still further, modifying some of his former positions, confirming others, and undertaking the interpretation of many passages in the large ten-line inscription, which he had formerly not ventured upon.

Lastly, in the Journal of the Asiatic Society of Bengal, No. 130, appeared a letter* from Capt. S. B. Haines, dated 29th Sept., 1842, containing an account of an inscription dug up in 'Aden, by the work-people employed in excavating a new road, from a depth of 20 feet beneath the present surface. The stone on which it is engraved is described as "a circular slab of pure and very compact white marble, with a raised rim round it, and apparently forming part of an altar." "The inscription," Capt. H. continues, "is not so well executed as many others that I have seen; but it is perfectly clear, without flaw or injury." It consists of but a single line. A copy of this inscription and an article relating to it were published by Prof. Ewald, in the Zeitschrift für die Kunde des Morgenlandes, Part I., for 1843. To this was added an article by Dr. J. Gildemeister, of Bonn, respecting several Musnad alphabets, taken from Arabic MSS., together with fac-similes of them.†

Such are the discoveries that have been made, and the original publications wherein they are described and discussed. Let us now see what information has been gained from them and from the other scanty sources that present themselves respecting the writing and language of the ancient Himyarites. And first of the alphabet.

* Copied in Forster's Geography of Arabia, Vol. 2. pp. 395, 396.

† After writing the above, I received from Germany a copy which I had ordered of Rödiger's edition of Wellsted. In the Excursus is contained an account similar to that here given. I have inserted a few additions from it.

Himyaritic Alphabet.

We are fortunately in possession of two distinct sources from which to obtain a knowledge of the ancient Himyaritic character, in addition to the inscriptions themselves. These are the Himyaritic alphabets found in manuscripts and the Ethiopic alphabet.

I. *The Himyaritic Alphabets found in MSS.* All the principal passages in Arabian writers relative to the ancient Himyaritic writing were collected by De Sacy, and published with a copious dissertation on the subject, in the 50th volume of the Mémoires de l'Académie des Inscriptions (Paris, 1808). In this paper its learned author made mention of a Himyaritic alphabet contained in an Arabic MS. of the Royal Library; but he did not furnish a copy of it, as he considered it to be fictitious. Nothing further of consequence appeared on the subject, till Rödiger published, in 1837, as aforesaid, facsimiles of two Himyaritic alphabets which he had obtained from MSS. in the Royal Library at Berlin. The first of them was found among some miscellaneous items on the first pages of an Arabic MS. (No. 110), written in Arabia in the middle of the 15th century, although the hand in which the alphabet is transcribed appears to be of a somewhat later date. The superscription is صورة الخط الحميرى *Form of the Himyaritic Writing*. Underneath the alphabet it is remarked, "It has many different forms; but this is the most correct. They separate the words from each other by a sign of emptiness (بصفر), to keep the words from running together; and the shape of this sign is that of an Arabic ا." The second alphabet is taken from a large manuscript in Persian (No. 248), containing a collection of miscellaneous pieces made in India in the first half of the last century. The compiler gives eight different alphabets, and among them is the Himyaritic. They are, 1. the writing of Adam's

time; 2. that of David's time; 3. the Hebrew; 4. the Himyaritic; 5. that of the wise Hermes; 6. the Pehlvi; 7. the Roman; 8. the Greek writing. The same remarks accompany the Himyaritic as in the preceding case: viz. that there are other forms of this alphabet, but that the one given is the most correct; and that the words are separated from each other by a mark resembling the Arabic Elif. After showing that these Himyaritic alphabets are genuine and correct, at least in the main, which he did by comparing them with the other Shemitish alphabets, especially the Ethiopic, Dr. Rödiger concluded with the discussion of a few points which had hitherto been in dispute. He gave his reasons for believing that the Himyaritic read *from right to left*, like the northern Arabic; he showed that its letters were *not* connected with each other; and discussed the meaning of the term *Musnad*.

In the year 1843, as mentioned above, was published Dr. Gildemeister's paper respecting several additional Musnad alphabets. Among them was a Himyaritic alphabet (خط حمير), from the last leaf of a Leyden MS. (No. 1250), which in some respects comes nearer to the character of the inscriptions than either of the others. Another alphabet given by Dr. Gildemeister is one the publication of which had long been regarded as a desideratum. It is that of the Kitáb al-Fihrist, mentioned by De Sacy. In the text accompanying this alphabet, the transcriber states that he copied it out of a book from the library of the Caliph Al-Mámún. Although most of the characters are very much distorted, it is evidently genuine.

II. *The Ethiopic Alphabet.* Here we have another means of ascertaining or rather verifying the values of the Himyaritic letters. The idea of a connexion between the two is suggested in the first place by the striking resemblance which the Ethiopic letters bear to the Himyaritic; and this idea is confirmed by the geographical position of Abyssinia, and still

more by the connexion which we know to have existed between the Abyssinians and Himyarites in ancient times.

As is usually the case, the most ancient form of the Ethiopic character is to be met with in inscriptions, of which several have been discovered and published. Those which from their form are evidently the oldest, were discovered by Mr. Henry Salt, in 1810, among the ruins of an old monastery called Abba Asfé, near the village of Yeeha, situated, according to his map, about 20 miles from Axum, the ancient capital of Tigré. "The chief part of the remains," says he, "consists of an ancient stone building, of an oblong square shape, about 60 feet long, and 45 wide, standing on the centre of an eminence, partly surrounded by trees, and commanding a beautiful prospect, in which the river Mareb makes a conspicuous object, winding its circuitous course through the valley." Among the fragments of a frieze that seemed to have formerly surrounded the building, and which he found on some adjoining heaps of stone, were three pieces containing some characters "very boldly carved," and which "appeared to be as fresh and perfect as on the day they were executed, two of them being cut into the stone, and the other raised above the surface."* He also gives copies of some other fragments previously found by him in Axum itself, but which are clearly of a later date. In the year 1830, three limestone slabs, each 4½ ft. 2 in. long, 2⅛ ft. wide, and 5 in. thick, were discovered among the ruins of the old city of Axum; and on them were engraven very long inscriptions in old Ethiopic letters, in different states of preservation. These were examined and copied by Dr. Rüppell, in 1833; and the two most legible ones are published by him in the Atlas to his last Travels in Abyssinia.† He expresses his satisfaction at the fact that a priest living in Axum took sufficient interest in these relics of antiquity to have them conveyed to

* Voyage to Abyssinia. London, 1814. pp. 431, 432.
† Reise in Abyssinien. Frankfurt am Main, 1838.

the court-yard of his house, where it is to be hoped they will at least be secure from wanton injury. Dr. R. concludes that the two of which he has furnished copies, were engraved early in the latter half of the 4th century.

In order to convey a clear idea of the nature of the Himyaritic alphabet, its relations to the Ethiopic, and the testimony on which our knowledge of it rests, I have here arranged in a tabular form and in parallel columns the most important of the materials already obtained. On the left are three of the Musnad alphabets, with the values of the letters in Arabic characters as given in the MSS. and their English equivalents; on the right are arranged in a corresponding order two ancient Ethiopic alphabets derived from inscriptions, together with the modern printed forms of the letters and their equivalents in Hebrew; and in the centre are drawn up the alphabets of several Himyaritic inscriptions according to their supposed values, in the order of the places where found, proceeding from east to west. (See the annexed plate.)

On each division of this table it will be proper to offer a few remarks.

I. *Himyaritic Alphabets from MSS.* In the Berlin manuscripts the alphabets are arranged in the order of the Arabic, while in that of Leyden the order of the Hebrew is observed as far as it goes, after which are added the pointed letters, ث, خ, ذ, ض, ظ, غ. The former order, as most convenient in the present instance, I have thought proper to retain. On comparing these MS. alphabets with the Ethiopic, it will be seen that the characters for ا, ب, and ت, so closely resemble the Ethiopic letters which correspond to them, that their affinity cannot be mistaken. The same is the case with the ج. The ح presents in the later Ethiopic the same form inverted, probably in order to agree in general appearance with many other letters of that alphabet, as ኣ, በ, ጸ, ጠ, &c. From the letter ፋ (د) is formed by a slight addition the corresponding soft ዘ or H (ذ). The Arabic ذ,

whose proper sound is *dh* (Eng. *th* in *the*), is pronounced like *z* by the natives of Maskat, as well as by the Persians and Turks. In Ethiopic, one of whose characteristic features is the confounding of the sounds of similar consonants,* the same mode of pronunciation has caused the proper Zain to be rejected from the alphabet altogether, so that its place is now supplied by H. The letters س, ش, and ص, as represented in the third MS. alphabet, agree exactly with the corresponding Ethiopic letters, except that the position of the Ethiopic ش is horizontal instead of perpendicular.† In the manuscript the first alphabet is written in lines running from right to left, the Himyaritic characters being placed under the Arabic letters to which they respectively correspond. The following is a fac-simile of this alphabet from س to ص:

Here the copyist it appears placed by mistake under ش (the diacritical points are omitted in the MS.) the character 𐩲, thus passing over the proper 𐩳. It would seem that on perceiving his error, being unwilling to deface the page by an erasure, he simply inserted the letter 𐩳 in its proper place between 𐩲 and 𐩴, and let the erroneous 𐩲 remain and repeated it in its place under ص. This mistake (which has caused both Gesenius and Rödiger to attribute to 𐩲 the value of ش) is evident enough, now that the testimony of the second alphabet is corroborated by that of the Leyden and Paris MSS.; so that the genuine Himyaritic forms of the three letters س, ش, and ص, are clearly those given in the third or Leyden

* *Ludolf*, Gram. Æthiop. lib. i. cap. ii. 2.

† This, it will be seen, corresponds exactly with the ancient Greek Sigma, which, on account of its name as well as of its upright position, Gesenius considers to be derived not from the Phœnician 𐤔 (*Shin*), but from the 𐤎 (*Samech*). Monn. Phœn. p. 66.

alphabet, at least as far as the manuscripts can decide.* This fully corroborates the conclusions which had already been arrived at, from a mere inspection of the letters themselves, as to the true original values of the Ethiopic ሰ and ሠ.† The close resemblance which the Himyaritic ق and ك have to the Ethiopic will be perceived at once. The radical connexion which the ل of one alphabet has with that of the other is likewise clear. The م is also plainly the same in both, although differing in position in the later Ethiopic, as in the case of ش. The و and ى are also clearly identical. Thus we see that although these Musnad alphabets contain some minor discrepancies, which caused them to be looked upon at first with distrust, a careful comparison of them with each other and with the Ethiopic alphabet confirms beyond a doubt the general accuracy of the forms and values which the manuscripts assign to the Himyaritic letters. The discrepancies alluded to, and which have arisen simply from unskilful copying, render each new alphabet that is brought to light a desirable acquisition as a corrective to the rest; and hence a welcome service was performed by Dr. Gildemeister in publishing the third alphabet from the Leyden MS., which, as he observes, gives for the letters ث, خ, ش, م, and ى, forms which correspond more closely with the inscriptions, and which consequently are more correct, than those in either of the other two. So too the alphabet from the Kitáb al-Fihrist, although grievously mutilated in transcribing, especially the latter part, furnishes us with two letters which approach nearer to the characters of the inscriptions than those supplied by either of the other alphabets; these are ز and ض. On the whole, the first and third alphabets are the most correct.

* In the Excursus this is so far corrected, that Prof. Rödiger there gives to ፈ the value of ש (instead of ס as before), although he still attributes to ሰ and ሰ that of ש or ס.

† *Kopp*, Bilder u. Schriften. § 327. *Hupfeld*, Exercitationes Æthiopicæ, § 2. 1.

II. *Himyaritic Alphabets from Inscriptions.*—It is a well recognised principle among paleographers, that a correct alphabet can be derived from inscriptions only when such inscriptions can be read and clearly understood. To accomplish this in the present case is a task of excessive difficulty, owing chiefly to the fact that these few and for the most part imperfect inscriptions contain the only Himyaritic compositions that we possess; and that consequently a knowledge of the peculiarities of this idiom and of the relation in which it stands to the other members of the Shemitish family has first to be obtained from the inscriptions themselves. The alphabets given in Plate V. are drawn from those inscriptions which have been interpreted with the most success. That these interpretations and the values they assign to the letters are quite accurate throughout, it would in this stage of the investigation be too much to assume. Still, amid much that is doubtful, some facts have been established with certainty; and it now behoves us to use the knowledge we already possess for the purpose of acquiring more. Nearly all the progress that has been made in deciphering these obscure monuments of a remote age is owing to the erudition and iron diligence of Prof. Rödiger, who has so well carried out what Gesenius begun. In my observations on each of these alphabets in turn, I shall take occasion to cite his reading and interpretation of the inscription on which it is wholly or chiefly based; and this for the twofold purpose of communicating to the reader the contents of these inscriptions as far as they have been made out, and of showing in general the foundation on which the values assigned to the different letters rest. This is all that can be required in an article like the present. Those who wish to examine the matter critically with a view of carrying the investigation further will of course procure the original publications, in which the reasons for each rendering are given, and all of which I have been careful to enumerate for this very purpose. It may be well to observe that the elucidations of the words

have been drawn chiefly from the northern Arabic (together with the Hebrew), sometimes from the Ethiopic or Geez, and occasionally from the Amharic.

The first of these alphabets (D) is taken from the large ten-line inscription discovered by Lieut. Wellsted at Hiṣn Ghorâb (Pl. VI. Fig. 1.), and which, from its length and apparent completeness, is by far the most important that has yet been published. Prof. Rödiger has expended a great deal of labor on this inscription, which he has deciphered throughout, although not with equal certainty in every part. His reading and translation as amended by himself* are as follows:

1 סמיקע אשוע ובניהו שרח ד כל . יכמל וי◦דכר די◦קר בת צלחית
2 ירחם אלהת כל◦ן ודיתסניו לדנם ◦מהלן ושרקן וחזם עיל◦ן
3 וישרם וירק ומכרבם וקהת וצפארן . ויל לד ולי מן ויסב
4 ולזחם ולדעין ◦כפרן ורקיה . ונרדן וקבלן ושר לי ובני מלחם
5 ואשעבחמו וחכת . ואלהן וסלקן וציקתחו ריחם ורכבן ומטין
6 ן וסאכלן ופארד ואזור . ומהרג סיבן בנסק סטרו דן מפנדן דע־
7 רן מויה כתובתהו גנאתחו וחלקהו ומסללתהו ומנקלתחו
8 כסתסנעו בהו כגזאו דן ארץ חבשת ואסיו אהבשן זרק־
9 תן בארץ חמירם כהרגו מלך חמירם ואקולהו אחמרן וארח ד
10 ורחהו דחלחן דלארבעי וסח מאתם חרקתם

1. Samika' Ashwa' with-his-sons executed this-all. May-it-be-completed and-made-a-memorial, this whereby peace is-established!
2. May- the-Deity -have-mercy-upon all-of-us, and- (upon those) -that-agree in-their-worship, our-chiefs, and-our-companions, and-the-whole-host-of our-tribe;
3. and-gladden-them, and-restore among-kinsmen obedience and-our-concord! Woe to-him-who turned-back from-us and-reviled,
4. and-to-him-who-oppressed and-to-him-who-accused-us of-infidelity and-witchcraft! And-we-armed and-he-opposed-us; and-evil- for-me and-my-sons -was the-strife
5. and-their-dissension and-provocation. And-he-pressed-upon-us and-

* J. R. Wellsted's Reisen in Arabien. Deutsche Bearbeitung herausgeg. von Dr. E. Rödiger. vol. 2d. p. 388–400.

Fig. 1. — *Inscription at Hiṣn Ghorâb.*
On a Smooth piece of Rock forming one side of the terrace

Fig. 2. — *Part of Hadramaut from Haines's Survey.*

reviled-us. Then-drove-him-into-straits the-storms, and-our-camels, and-our-steeds,

6. and-our-infantry; and-he-was-left-alone and-turned-back. The-attack-of our-slanderer in-a-connected-narration they-have-inscribed (on) this mountain, which-we-

7. obtained-in-fee as-waste-land: (to wit) how-we-repaid-him his-crime, and-his-falsehood, and-his-deceit, and-his-calumny;

8. how-they-agreed-together therein; how-they-occupied this land-of Habashat; and (how) our-people grieved-over our-dis-

9. persion in-the-land-of the-Himyarites; how-the-king-of the-Himyarites and-his-princes fell-upon our-troops; and-also-the-date-of the-same.

10. The-time-thereof from-our-settlement was in the six hundred and fourth year.

In order to facilitate the comparison of the translation with the original, I have divided and numbered it according to the lines of the inscription, and have connected by means of hyphens those words of the translation which correspond to a single word in the text. The two first lines are made out with tolerable certainty. The middle part of the inscription, as Prof. Rödiger himself acknowledges, is more or less obscure and doubtful. From the middle of the sixth line it again becomes clearer; and the meaning of the two last lines may be considered as settled. On comparing the reading of Prof. R., here given in Hebrew characters, with the inscription itself (Pl. VI. Fig. 1.), it will be seen that there are some slight discrepancies between them. Some of these various readings are derived from a much larger MS. copy of the inscription, which was forwarded to Gesenius by the London Geographical Society, and by him communicated to Rödiger. The others are derived from conjecture, which it was almost absolutely necessary to employ, as in many places the reading is extremely doubtful; either because, as is sometimes the case with ancient alphabets (witness the Phœnician), the forms of some letters resemble those of others so closely that it is very difficult to tell them apart even in the

autographs themselves; or else because, as is exceedingly probable, the distinctive characteristics of certain letters have escaped the observation of the copyists, who have thus confounded several similar ones under the same form: as for instance ג and ל, ב and ד. Hence it will be next to impossible to give a perfectly satisfactory explanation of this inscription until a more accurate copy is obtained.

The following passages are among those which are the least subject to doubt. At the beginning of the second line we have the phrase ירחם אלהת כלה* i. e. يرحم الاهة كلّنا *the Deity have mercy on us all;* in the latter half of the fourth line, וגרדן וקבלן ושר לי ובני מלחמת i. e. وجرّدنا واقبلنا وشرّ لى وبنىّ الملحمة *and we armed, and he opposed us, and evil* (destructive) *for me and my sons was the battle.* In the middle of the 8th line we have the expression ארץ חבשת ارض احابيش *the land of Ḥabashat;* in the middle of the 9th line מלך חמירם ואקולהת *the king of the Himyarites and his princes;* and in the last line the numbers of the date ארבעי ושת מאתם *six hundred and fourth.* Supposing these readings to be correct, which there is every reason to believe they are, the values of the following letters are determined, viz.

ى و ه ن م ل ك ق ع ض ش س ر د خ ح ج ث ت ب ا

י ו ח נ מ ל כ ק ע צ ש ת ר ד ה ח ג ה ת ב א

Those then which remain to be identified are:

ف غ ظ ط ص ز ذ

פ ע ׳ ט צ ז ׳

* This last word is not quite so certain, owing to the presence of the small circle, which Rödiger considers sometimes as a ע, and sometimes as a short vowel, *a*, *i*, or *e*.

† For an explanation of this last word, see p. 459.

Prof. R. is of opinion that in the Himyaritic as in the Ethiopic the character H stood for either ז or ד, and hence he has represented it by either, according to the supposed etymology of the words in which it occurs. But from the MS. alphabets it is evident that the Himyarites possessed a separate letter for ז (comp. p. 442 seq). This letter Prof. R. thinks that he recognises in the character X near the end of the 8th line, in the word זרקתן *our dispersion;* and although the places in which this character has as yet been found (only four in all) are too doubtful to give the requisite confirmation to this conjecture, it is strongly supported by the fact that the alphabet of the Paris MS. since published gives to the letter ز precisely this form (p. 444). The letters צ and ט appear to occur near the end of the 6th line, in the phrase בנצק שטרו i. e. بنسق سطروا *they have inscribed in order.* It is true that both Gesenius and Rödiger read שׂ instead of צ, as before mentioned (p. 444, note), which makes the word נשׂק agree precisely with the Arabic نسق; but this is not necessary, even if we give the same meaning to the word, since the interchange of שׂ and צ is common to all the Shemitish languages, and it is extremely probable from other circumstances that the confounding together of the different sibilants for which the Ethiopic is remarkable took place also in the Himyaritic. If the Himyaritic really possessed the letter ظ, it does not appear in the inscriptions; at least it has not yet been identified. The same may be said of the letter ذ. The character ⋇, to which the power of ه is assigned in the Table, occurs a number of times in this inscription, but unfortunately in no passage where the reading is so certain as to be implicitly relied upon. The doubt is strengthened in the present case by the different form (◊) which this letter seems to take in the other inscriptions. Still, as Rödiger remarks, the difference between these characters is not so great as absolutely to disprove their identity, since a mere prolongation at either

extremity of the strokes composing ◊ will produce the form ⧖;* besides, it is hardly to be supposed that so long an inscription as this would not contain a single ⧖.

Having now gone through the alphabet, we may be allowed a few remarks on the two small circles (∞), to which Rödiger has assigned the power of ו, in opposition to Gesenius, who regarded it as a mere sign of interpunction. In 76 places where it occurs in the inscriptions, this character appears 47 times at the beginning, 9 times in the middle, and 20 times at the end of words. Now on the supposition that the character in question is the letter ו, this is about what we should have to expect. In all the ancient Shemitish languages, including the Ethiopic, this letter prefixed to words forms the often recurring conjunction *and*; at the end of words it is employed in certain plural terminations of verbs, and also in some affixes ending in *o* and *u*; that it does not occur more frequently as a medial is to be attributed to the fact that in the older Shemitish writings, and especially in inscriptions, where the engraving of each letter is a work of labor, the so-called *matres lectionis*, or vowel-letters, are for the most part omitted, except when necessary to the sense, as for instance in indicating grammatical inflexions. This form of the ו explains in a natural manner the origin of the later ⟜, which appears in other inscriptions, and which answers nearly to the form of the letter ו in the Musnad alphabets, as also to that of the Ethiopic ⵡ; though why they are made so much smaller than the other letters, it is not easy to say. Comp. also the Syriac ܘ. It will be observed that there are a few characters in this inscription which differ more or less from the commoner forms which are given in the Table, as for in-

* Gesenius assigned to this character the power of ו, on account of its similarity to the form of that letter in the two first MS. alphabets. Rödiger himself is somewhat inclined to give it the power of a ⧖, and has even placed it opposite that letter in the alphabet constructed by him; to which he was probably induced in consequence of having attributed to what we must consider as the real ⧖ the power of ⧗.

Plate VII.

Fig. 1. – *Inscription found at Ṣanʼá.*

Fig. 2. – *Inscription on side of a house Bazaar Ṣanʼá.*

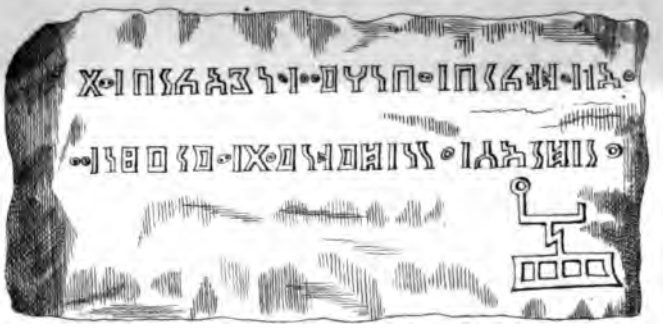
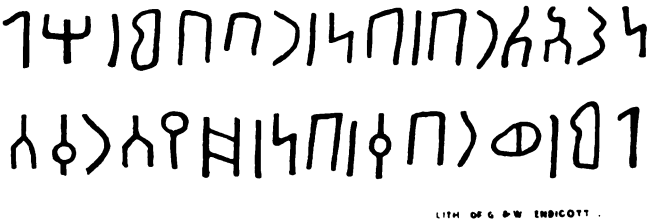


Fig. 3. – *Inscription dug up in ʼAden.*



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stance the figure N (ב or ד). At present it is impossible to say whether they denote varieties in the pronunciation of the letters or are owing to errors in copying. The character ʎ in the 5th line seems clearly to indicate a variety in the sound of the letter כ.

The two next alphabets are taken from inscriptions copied by Lieut. Cruttenden and Dr. Hulton in Ṣan'á. The first of them (E) is from an inscription of four lines on a stone said to have been brought from Máreb (Pl. VII. Fig. 1.). Rödiger reads and translates as follows:

1 עבדכללם וש॰תהו אזו לי בת אלה
2 לעאר ובניהמי הנאם. וה॰לל אלהת קולם צ־
3 נאו. והשינן בתהמו ירת ברדא רחמנן. וצנא
4 בורח̇ ד̇ח̇רק ד̇לת̇לת̇ן וסבעי וח̇מס מאתם חיו(ל)

1. 'Abd-Kulálam* and-his-consort bequeathed to-me the-house-of God (i. e. this temple)
2. in-fee; and-their-sons (now) bestow (it). With-invocation-of the-Deity their-declaration they-have-
3. confirmed. Riches may- their-house -inherit, by-the-help-of the-merciful (gods)! And-it-was-confirmed
4. in-the-month of-Kharik, in the five hundred and thirty-seventh year.

Notwithstanding the admirable distinctness of our copy of this inscription, which indeed is observable in all those taken by Mr. Cruttenden, it will be seen that Prof. R. has here also had recourse to emendations of the text. Thus he reads אזו לי instead of אבולי, והשינן instead of והשירן, &c. The chief differences to be observed between this and the preceding alphabets are, that the forms of several letters are less angular; that the letter ב has, in addition to what appears to be the more ancient form A, also the simpler form Π; and that the triangle of the ד is placed on the right side instead of on the left, a peculiarity which is also met with in the inscription of

* Probably the 'Abd Kulál of Arabian authors, the first Christian sovereign of the sons of Ḥimyar (see p. 427), which would make the inscription about 1500 years old. As to the final ם, see p. 459.

Naḳab el-Ḥajar. The character 𐩱 is also found once here, which Prof. R. takes for ד, reading the two first words of the last line בורח דחרק *in the month of Kharik*, or more generally, *in the season of the monsoon.* The letter 𐩴, which he considers as a compound of ל and ע, is taken by Ewald for a ג.*

The next alphabet (F) is derived from two inscriptions: one consisting of two lines found on the side of a house in the bazaar of Ṣan'á (Pl. VII. Fig. 2.), and the other of ten broken lines from a marble slab used to cover a hole in the roof of a mosk (see p. 436). The latter, on account of its fragmentary nature, I have not thought it worth while to copy; the former, which apparently is perfect, is read and translated by Rödiger as follows:

1 עאג ודדכרב ובנהמו, ונשאכרב ות־
2 ער דנאס ערן ד מדר מ״ת ומרצצן ו־
3 יחטט

1. 'Ag, and-Dadkarib, and-their-sons, and Nashákarib,† and-Ta-
2. 'ar the-younger, have-taken-in-fee this dead (i.e. waste) land, and-tilled-it-again. And-
3. so-be-it-occupied!

The last word is made out from the letters contained in the monogram, several of which are also found beneath the great inscription at Ḥiṣn Ghoráb. For the second letter of this alphabet we have the simple form 𐩨 alone. The letter י has two horizontal strokes, excepting a single instance in the longest inscription, where it has only one. The older form of ו (∞) occurs here only in the middle of the first and at the end of the second line; in all the other places in both inscriptions it has the modernized form 𐩥. The long inscription, besides several

* Prof. E. reads the beginning of this inscription as follows: עבדכללם ושעתהו אבולי בת אלה גאן *'Abdkulál—to-him-hearkened Abúli, daughter-of the-god Gán* (Arab. *Jinn*). Zeitschr. für Kunde des Morgenl. vol. v. p. 208.

† This ending כרב *karb* or *karib* is found in several Himyaritic proper names handed down to us by Arabian writers. Comp. the name of the sovereign As'ad Abúkarb (p. 427) and of his predecessor Kolaikarb. *Abulfedæ* Hist. Anteislam. p. 116, ed. Fleischer.

other letters not contained in the short one, all of which are given in the alphabet, presents the character ḥ, answering to the Ḥiṣn Ghoráb ; and also , to which latter Rödiger assigns the power of ט.

The next alphabet (G) is from the inscription of a single line recently dug up in 'Aden (Pl. VII. Fig. 3.). This Ewald reads as follows:

* נשאכרב בן רבבם חלם ורבק בן זיסרקס

The alphabet derived from this inscription agrees very nearly with the preceding one; the characters in general are less angular and more flowing, as for instance in the letters א, כ, and ש; the ש exchanges the form for the simple ; and the מ presents a form rounded at the corners of the left side. The ר has the simple form , which is also found in a fragmentary inscription brought from Máreb. The letters of the 'Aden inscription bear the nearest resemblance of any to those of the Musnad alphabet.

III. *Ethiopic Alphabets.*—The remaining alphabets are from Abyssinia. The first of them (H) is made up from seve-

* This plainly consists almost wholly of proper names, among which we find again the נשאכרב of the two-line inscription from Ṣan'á. Ewald also recognises a proper name of like termination, viz. עזכרב, in the first line of the Ḥiṣn Ghoráb inscription, which Rödiger, by the help of a MS. copy, has emended into ויסלכר בן. We have here also twice repeated the word בן *son*, which is of such frequent occurrence in Shemitish inscriptions, and which Ewald discovers likewise in the penultimate word of the 6th line, and in the 4th word of the 8th line of the inscription of Ḥiṣn Ghoráb. Now if these readings of Ewald are correct,—and most of them are so well founded as scarcely to admit of doubt,—it may well be asked, How much is there in the translations that have been given on which we can rely? The answer is, that there is very little on which we can absolutely depend, except the dates at the end of the large inscription of Ḥiṣn Ghoráb and of the four-line inscription of Ṣan'á, together with a few proper names. In fact the erudite and conscientious Prof. Rödiger offers us these fruits of his protracted labors only as *attempts*. And lest these interpretations should by any chance give rise to speculations and exhibitions as painfully absurd as some of which these very inscriptions have already been made the object, I cannot do better than repeat here the warning of Ewald, that "*the attempts to discover in these inscriptions a connected sense are still of too doubtful success to enable any one to build further upon them who is not prepared to investigate them for himself.*"

ral fragmentary inscriptions found and copied by Mr. Henry Salt near the village of Yeeha (Yahá) on the banks of the river Mareb. These I have copied exactly in Pl. VIII. Figs. 1, 2, 3, 4. Salt has placed them all upside down, with the exception of Fig. 2, where he was guided by the cornice that runs along the top of the frieze. Although he could make nothing of these characters, we now can read them with the greatest ease; for it will be seen at once that, excepting that they are rather more angular, the letters found on these fragments *agree in form precisely with those of the western Himyaritic inscriptions*. But this is not all: the words are likewise *divided by perpendicular strokes*; and moreover they read *from right to left*, as is evident from the word בן* in Fig. 2, which reads thus:

אקני בן ורן

It is a remarkable circumstance that these elegant and accurately copied inscriptions, discovered at the same time with those of Seetzen, and which would have supplied so essential a link in the chain of their argument, should have been overlooked by the eminent scholars who have devoted so much labor to this subject. I can account for the fact only on the supposition that the longer but much less important fragments found by Mr. Salt in Axum caused these few simple characters to be disregarded. One portion of them, however, has since been brought into notice in a different manner. The Rev. C. W. Isenberg has inserted in an appendix to his Amharic Dictionary, published in London in the year 1841, two inscriptions of a single line each, discovered by him also in the village of Yahá. They are copied by Rödiger in a review of Isenberg's Amharic Grammar and Dictionary in the Allg.

* Prof. Rödiger seems to have been prevented from recognising this word in any of the inscriptions, by the fact that it is no longer found in Ethiopic.—But this, being an old Shemitish dialect must have originally possessed the word; and that such was the case is proved, if proof were wanting, by the expression ብንተ ፡ ዐይን ፡ i. q. Heb. בַּת עַיִן still found in it, which is used not only in the version of the Scriptures, but also in the native poetry. See *Ludolf*, Lex. Æthiop. col. 242.

Plate VIII.

Inscriptions found at Yahá by Salt.

Fig. 1.

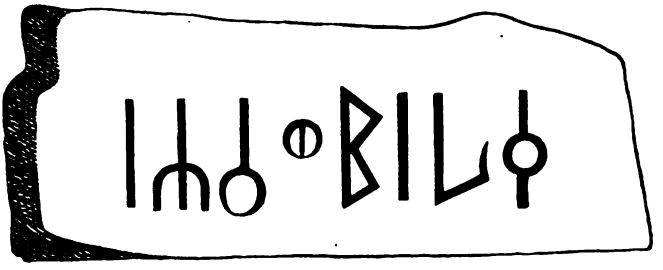


Fig. 2.

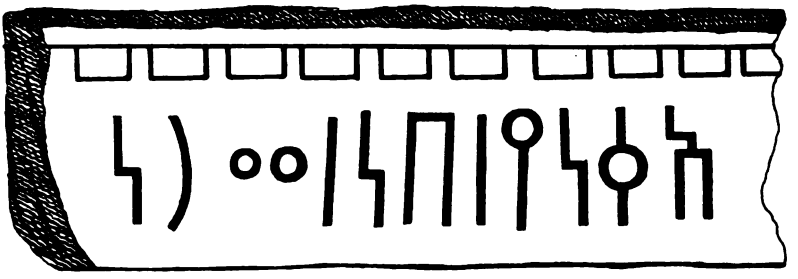


Fig. 3.

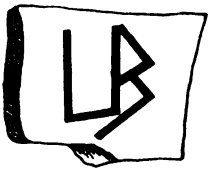
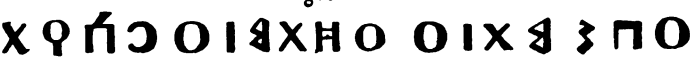


Fig. 4.

Inscriptions found at Yahá by Isenberg.

Fig. 5.

Fig. 6.



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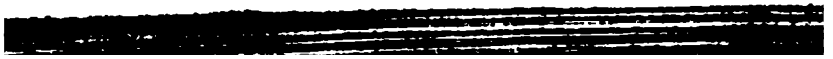


Lit.-Zeitung of Halle for May, 1842, and also in his edition of Wellsted's Travels. I have inserted them in Pl. VIII. Figs. 5 and 6. Now on comparing the first of these two lines with Fig. 2, it will be seen that it is *the very same inscription in raised characters which was found and copied on the spot by Salt thirty-four years ago.* Notwithstanding the neatness of the characters in Mr. Isenberg's copy, our acquaintance with the Himyaritic alphabet shows at once that the genuine forms are those given by Salt. It is evident that Mr. Isenberg's familiarity with the modern Ethiopic character has led him unintentionally to distort the forms of some of the characters in a slight degree. Thus the circles in the letters ק and ר are disproportionately large, and the ר is brought too near the form of a circle. These errors however are of little consequence, as the letters are still easily recognised. But there are other mistakes which are more serious, as they materially affect the reading and interpretation of the fragment in question. One of these is the omission of the dividing stroke between the second and third words. The other consists in making the letter ו (••) entirely too large, the circles of which it is composed being distended to the size of the other characters; and this led Prof. R. to suppose that each of these large circles was either a ו or a ע, and that where it stood for ו it probably should have had the form of the Ethiopic ዐ, the middle stroke having been either obliterated or overlooked. These suppositions however are completely overthrown by an inspection of the copy made by Mr. Salt, which demonstrates the complete identity of the ancient inscription-character of southern Arabia and Abyssinia. So that in fact we have long been in possession of exact copies of a portion of the Himyaritic alphabet, without being aware of it.*

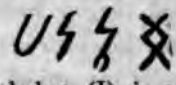
* Prof. Rödiger's reading of these two lines is:

אקני בנורן

ובשמת ועזתם ורסיתן

which he endeavors to explain from the Ethiopic, conjecturing that the two lines are probably fragments of one and the same inscription. Owing to the er-

I have not thought it worth while to give the forms of the letters in the Ethiopic fragments copied by Salt from the back of the stone that contains the great Greek inscription at Axum.* These characters, although evidently ancient and without any certain traces of vowel-notes, are more modern than those of the inscriptions at Yahá, and occupy an intermediate place between the latter and those of Rüppell's inscription, of which we are about to speak. Some of these letters are inserted by Rödiger in his comparative alphabet appended to Wellsted's Travels. Among those which he has not ventured to introduce is the assumed letter ם of the inscription at Ḥiṣn Ghoráb (see p. 449). It occurs in the following word:



The remaining alphabet (I) is taken from an Ethiopic inscription found by Dr. Rüppell in Axum. He supposes it to be contemporary with the large Greek inscription discovered in that city by Salt, and to belong to the time of the east Roman emperor Constantius, 343—356 A. D.† The letters on this monument are very angular and exhibit those variations in form which denote the vowel-sounds, but the words are separated by a *perpendicular stroke* as in the older inscriptions, after the manner of the Himyaritic; so that this alphabet constitutes the connecting link between the ancient and the modern forms of Ethiopic writing.

Himyaritic Language.

As has already been observed, a number of notices and hints respecting the language of the Himyarites are scattered

rors of copying pointed out in the text, his reading and interpretation of the first line are evidently wrong. Thus, instead of two proper names connected by the word בן *son of*, he explains it by the two words ኢቀኒ፡ በንባርነ፡ *I possess by means of our siege.* The rendering of the second line is probably equally far from the truth, as it seems also to have been copied incorrectly.

* Voyage to Abyssinia, p. 414.

† Reise in Abyssinien, vol. 2. pp. 277. 342, 343.

through Arabian authors, and it is now greatly to be desired that some European scholar possessed of the requisite facilities should endeavor to make a complete collection of them; for to those who devote themselves to poring over such crumbling remnants of a forgotten antiquity, every ray of light, however faint and broken, is of inappreciable value. All the Himyaritic words which Gesenius had been able to obtain from this source, are given by him in a note to his article in the Literatur-Zeitung. Most of these words are Arabic with a slight variation in form or meaning. The two following show an approach to the Hebrew, viz:

هدس *myrtle*, Heb. הֲדַסָּה, Arab. آس.

وثب *to sit*, Heb. יָשַׁב. Here the *meaning* is Hebrew, while the *form* is Arabic (in which it has the opposite meaning *to leap*).

Two others he compares with the Ethiopic, viz. هجر *castle, city*, and قيل and مقول *vicegerent, prince*; but these may be as well explained from the Arabic.

But let us turn to the inscriptions themselves, as our surest means of information at present. These, few as they are, if we could read and interpret them with certainty, would afford us a very tolerable idea of the nature of this language and of its affinities to others of its class. But as we cannot yet do this, it is necessary to use the greatest precaution in drawing general conclusions from them. Consequently, in endeavoring to ascertain the facts of the language as far as they can be derived from these inscriptions, it will be proper to restrict ourselves to those portions of which the reading and interpretation may be looked upon as established.

First, as to the *materials* of the language. The words whose meanings are best ascertained consist in the first place of nouns and verbs which are common both to the Hebrew and Arabic, and which, where these two languages differ, agree sometimes with the one and sometimes with the other of them. The simplest mode therefore of exhibiting the

affinities of these words will be to arrange the corresponding Hebrew, Himyaritic, and Arabic in three parallel columns, thus:

Arab.	Him.	Heb.	
אלה	אלה	אלוה	god.
ארץ	ארץ	ארץ	earth.
בן or אבן	בן	בן	son.
Hence prob. תאריח *	ורח	ירח	month.
ירת	ירת	ירש	to inherit.
מלחמת	מלחם	מלחמה	battle.
מלך	מלך	מלך	king.
עאמת	עם	עם	people.
קבל	קבל	קבל	to oppose.
רחם and רחם	רחם	רחם	to be merciful.
שטר	שטר	שטר	to inscribe.
שלט	שלט	שלט	to rule.
שם or אשם	שם	שם	name.

But the class of words of which we can present the completest list, and with respect to which there is not any danger of mistake, are the numerals; and these exhibit the same relations as the preceding. Thus:

Arab.	Him.	Heb.	
ראבע	ארבעי	ארבעי	fourth.
חמש	חמש	חמש	five.
שת	שת	שש	six.
שאבע	שבעי	שבעי	seventh.
תלאתון	תלתן	שלשים	thirty.
מאית	מאתם	מאת	hundreds.

We also meet here with that distinctive feature of the Shemitish languages, the use of prefixed particles and pronominal suffixes. Thus we have the prefixed conjunction ו, and the prepositions ב, כ, ל, all of which are common both to the Hebrew and Arabic languages. Both Gesenius and Rödiger find in a number of places the prefixed demonstrative pronoun

* Versuch, p. 27 seq. Zeitschr. für Kunde des Morgenlandes, vol. v. p. 210.

ה and the separable הן, which they compare with the Ethiopic H and HYF; but there is not one of these places where the reading is not for some reason or other doubtful; and besides, they could be explained as well from the Aramaic as from the Ethiopic. The same observation applies to the want of a prefixed definite article.* As suffixes we have the 1 pers. sing. י, 3 pers. sing. הו, 3 pers. plur. המו (the old Hebrew poetic form) and also המי (in the word בניהמי). See De Sacy, Gram. Arabe, Vol. I. §§ 1012, 1014.

As regards *inflexion*, the feminine of nouns is formed, as in Arabic and often in Hebrew, by adding ת: thus אלה *god*, אלהת *goddess*; בן *son*, בת (for בנת) *daughter*. The plural is made by adding ן, as in Aramaic, and often in Arabic: thus אלה *gods* (so Gesen. and Ewald in ten-line inscr., line 5), תלתן *thirty*. Gesenius and Rödiger find another form of the plural in ם, as חמירם *Himyarites*, מאתם *hundreds*; though the latter owns that where this letter occurs at the end of proper names, as עבדכלם, it may be merely a Himyaritic afformative, such as we find appended to some of the Himyaritic words cited by Arabian writers (e. g. كسعة, Him. كسعوم). Ewald, however, is of opinion that ם in no case denotes the plural, but is the sign of the genitive;† since in nearly all the places where it is found, the word which bears it is clearly in regimen with a preceding noun. This however is doubtful; for we see that this afformative is attached to the first word of Cruttenden's four-line inscription, which appears to be perfect at the beginning.‡ Rödiger also finds the pluralis fractus of the northern Arabic in the word אקוי, which he takes to be i. q. اقوال plur.

* The Arabian writers inform us that the Himyarites pronounced أم instead of ال (*De Sacy*, Anthol. Grammat. p. 110); but this applies only to their mode of speaking northern Arabic.

† Zeitschr. für Kunde des Morgenlandes, vol. v. p. 209.

‡ So too in an inscription of three short lines on a detached stone at Hisn Ghoráb, it ends the first word, מרתדם *Morthedam*, the name of a Himyaritic sovereign, the son of 'Abd Kulál and successor of Tobba' el-Asghar (see p. 428).

of قيل.* The ordinal numerals are formed as in Hebrew, by adding to the cardinals the adjectival ending י; thus ארבעי, שבעי.

As regards the inflexion of verbs, we have the form of the pret. 3 pers. plur. in שמרו, and of the fut. 3 pers. m. sing. in יהוסד. In some instances, we appear to have the pret. 1 pers. plur. ending in ן, as גרדן; but these are less certain. As to the so-called *species* or *forms* of the verb, we have in the two-line inscription at Ḥiṣn Ghorâb, the verb שתחרי agreeing with the Arabic VIII. form استفعل; and so perhaps שתורי i. q. استولى, in the first and second lines of the inscription from the mosk at Ṣan'â. Rödiger is also of opinion that we have the Arabic IX. form in אזור i. q. ازنمّ (ten-line inscr., line 6), and the Arab. and Ethiop. X. form in שתשלש, line 8; but this lacks confirmation.

It appears from the phrase ירחם אלהה, that a verb which precedes its subject of the feminine gender, may be put in the masculine, as is often the case in Hebrew.

A consideration of these facts leads us irresistibly to the conclusion (to be confirmed or modified by future investigations), that the Himyaritic is a Shemitish language, occupying a position intermediate between the Hebrew and Aramaic on the one hand, and the northern or Ishmaelitic Arabic on the other; or in other words, that it is an ancient dialect of the Arabian division of the Shemitish or Syro-Arabian stock. Now this agrees exactly with the express assertion of Ibn Khaldûn, certainly no mean authority on such a subject, whose words are to this effect: "The language of Ḥimyar differed from that of Moḍar (i. e. the Arabic of the Koran), in the formation of its words, in its inflexions, and its vowels, precisely as the present language of the Arabs differs from that of Moḍar."†

* See p. 457, and *Johannsen*, Hist. Jemanæ, p. 50.

† *De Sacy*, Anthol. Grammaticale, p. 413.

Ehḳíli Language.

This is the language spoken at the present day about Mirbáṭ and Ḍafár,* in the eastern part of the ancient land of Ḥimyar; whence it has been termed the modern Himyaritic. Although an examination of this dialect shows that it will probably be of little or no use in interpreting the ancient inscriptions of that region, yet it may serve to throw some light on the modern history of the people, and accordingly we will devote a brief space to an enumeration of its leading peculiarities. An account of it was drawn up by Gesenius, in his article before referred to, from the letters of M. Fulgentius Fresnel, French consul at Mokha.† As I have not had access to the numbers of the Journal Asiatique which contain M. Fresnel's communications, I am indebted to the statement of Gesenius for the facts which follow. The Ehḳíli, which has a thoroughly modern aspect, exhibits on inspection a considerable affinity to the Ethiopic language, and in some respects to the Amharic.

As M. Fresnel obtained his information from a native who could not write, and who could not even tell whether this dialect was written or not, his first undertaking was to ascertain the sounds of the language, and to seek to express them by means of the Arabic character. He found that his instructor distinguished between at least 36 consonants. This is considerably beyond the Arabic, which has 28; and a little over the number found in the Amharic, which has 33. Among them are a great variety of aspirated linguals and dentals, and also a nasal *n*. In these respects it resembles the Amharic, whose seven peculiar letters added to the Ethiopic alphabet are of this description: they are *sh*, *tsh*, *ṭsh*, *dsh* (Eng. *j*), *zh* (*s* in *pleasure*), *kh* (Germ. *ch*), and *ñ*.

* The Sephar of Gen. x. 30, and still called by the natives Isfár.

† Published in the Journal Asiatique, June, July, and December, 1838.

In some words a long *u* is inserted, e. g. Arab. شمس *sun*, Ehk. سوم, Arab. امر *he said*, Ehk. عوذر. Comp. in Amharic ስሐውዋ for ስሐዋ.*

The liquid *l* is dropped after a vowel, which then frequently takes the form of *o*; e. g. Arab. *kalb* dog. Ehk. *kób*, Arab. *alf* thousand, Ehk. *óf*. So Eth. *salastu* three, Amhar *sóst*. Comp. *falsus* Fr. *faux*, *mal* plur. *maux*, &c.†

The soft labial *b* changes into its vowel of the same organ *u* (or *o*); e. g. Arab. سبع seven, Ehk. شوع, Arab. كلبى my dog, Ehk. كوى. So Eth. ነበረ *nabara* to remain, Amhar. ኖረ *nóra*. Comp. Heb. בַּת־שֶׁבַע and בַּת־שׁוּעַ.

But the most important part of M. Fresnel's communication, and that which furnishes the best clue to the nature of this dialect, consists in the several verbal paradigms. I here copy the paradigm of the regular verb زجد *to take*, both in Arabic and English characters, placing parallel with it for the sake of comparison the corresponding forms in Hebrew and Ethiopic.

Pret. Sing.		Ehkili.		Ethiop.	Heb.
3	m.	زجد	zejed	gabera	ḳaṭal
	f.	زجدت	zejd*ot*	gaber*at*	ḳaṭel*ah*
2	m.	زجدك	zejid*ek*	gabar*ka*	ḳaṭal*ta*
	f.	زجدش	zejid*esh*	gabar*ki*	ḳaṭal*t*
1	c.	زجدك	zejid*ek*	gabar*ku*	ḳaṭal*ti*
Plur.					
3	m.	زجد	zejed	gaber*u*	ḳaṭel*u*
	f.	زجد		gaber*a*	
2	m.	زجدكم	zejed*kem*	gabar*kemu*	ḳeṭal*tem*
	f.	زجدكن	zejed*ken*	gabar*ken*	ḳeṭal*ten*
1	c.	زجدن	zejed*na*	gabar*na*	ḳaṭal*nu*

* See *Isenberg's* Grammar, p. 16.

† See *Gesenii* Monn. Phœn. p. 431.

Fut. Sing.		Ehkili.		Ethiop.	Heb.
3	m.	يزجد	*yizjod*	*yegbar*	*yiktol*
	f.	تزجد	*tezjod*	*tegbar*	*tiktol*
2	m.	تزجد	*tezjod*	*tegbar*	*tiktol*
	f.	تزجد	*tezjid*	*tegbari*	*tiktéli*
1	c.	ازجد	*ezjod*	*egbar*	*ektol*
Plur.					
3	m.	يزجد	*yizjed*	*yegbaru*	*yiktelu*
	f.	تزجدن	*tezjodun*	*yegbara*	*tiktolna*
2	m.	تزجد	*tezjed*	*tegbaru*	*tiktelu*
	f.	تزجدن	*tezjodun*	*tegbara*	*tiktolna*
1	c.	نزجد	*nezjod*	*negbar*	*niktol*

Here we see that the Ehḳíli, in its verbs at least, belongs to the Ethiopic subdivision of the Arabico-Ethiopic branch of the Shemitish languages. This is at once evident from the Ethiopic peculiarity which it exhibits of using *k* for the afformative of the second person, while the Arabic, in common with the Hebræo-Aramaic branch, retains the *t* of the separable pronoun.

The afformative of the 2 pers. fem. sing. of the preterite agrees precisely with the Amharic, which is also *sh*. We are informed by De Sacy* that some tribes of Arabs substitute *sh* or *s* for the pron. suff. *k* of the 2 pers. fem. sing., or else add it to the *k*; in support of which he refers to an extract from Ḥaríri and another from Zamakhshari in his Anthologie Grammaticale (pp. 110, 267). It appears too from a passage in Masúdi that this peculiarity was found also among the ancient inhabitants of Mahra.†

The 3 pers. pret. plur. has dropped the final *u*, which in Hebrew and Amharic is retained. Comp. Syr. ملكه.

The 2 pers. fem. sing. of the fut. *tezjid*, Gesenius remarks,

* Grammaire Arabe, vol. i. § 1007.

† Cited by Dr. Gildemeister in the Zeitschr. f. Kunde des Morgenlandes, vol. v. p. 216.

is probably for *tezjidi*, the fem. afformative *i* (although afterwards dropped) causing the same vowel to be taken in the preceding syllable. Comp. Heb. שָׁלוֹשׁ, שְׁלִישִׁי.

The 3 pers. fem. plur. is remarkable for presenting the preformative *t*, as in Hebrew, instead of the *y* which is found in Aramaic as well as in northern Arabic and Ethiopic. Here the comparison with the Amharic fails us; since that language, like the modern Arabic, rejects the feminine forms in the plural of both tenses, so that all three persons are common.

The imperative is formed in the usual manner, viz. by rejecting the personal preformatives of the 2 pers. future: thus *zejod*, f. *zejid*; plur. *zjed*, f. *zjodun*. There is likewise a dual, which is made by adding *o* to the sing. pret. fut. and imp. except the 2 pers. pret. which is *zejedetshi*. Comp. Amhar. 2 pers. plur. *kabaratshhu*.

It seems there is also a passive voice *zejid* or *zijid*, inflected like the active in the preterite, and with Elif prosthetic in the future. Comp. the Chald. pass. קְטִיל, קְטִילַת, &c.

As to the *species* of the verb, it appears that the Eḥkíli wants the II. III. VI. VII. forms of the Arabic; while it has one which the Arabic does not possess, viz. with اس prefixed. Comp. Amhar. አስመለሰ *asmalasa* and Heb. הִתְקַטֵּל.

Along with the other particulars furnished by M. Fresnel to enable us to form a correct idea of this dialect, is a short connected sentence in Eḥkíli with an Arabic translation subjoined. It is as follows:

مد آير يوسف بر عسر شوع عيون بدى رعى ارن
لما كان يوسف ابن عشرة سبع سنة كان يرعى الغنم

كا عهاش بشا سقينى كين بلها بين زلفا اينث ظيش
مع اخوات وهو متربى مع ابنا بلها وابنا زلفا حريم ابيه

When Joseph was seventeen years old, he fed (lit. began to feed) the flock with his brethren; and he was a lad with the sons of Bilhah and with the sons of Zilpah, his father's wives.

Gesenius in analyzing this fragment recognises in it a strong leaning to the Ethiopic and Amharic. I will merely offer an observation on the pronoun 3 pers. masc. sing. شا (*shá*) and the suffix ش (*sh*), which we find in the words بشا *and he* and ظبيش *his father*. It is well known that the letters *h* and *ṣ* are frequently interchanged in the different languages of the Indo-European stock; and hence we might suppose that شا is nothing but a modification of the common Shemitish pronoun הוּא. In the languages of the Syro-Arabian family, however, this change is not found to take place; and therefore it will perhaps be more correct to derive this pronoun from the Amhar. ርሱ (*ersú*) *he*, lit. *caput suum* (for the syncope of the *r*, comp. the Amhar. *Kustân* for *Krestiyán*, Christian).*

General Results.

We may now be permitted to ask ourselves, What are the results for paleography, philology, and ethnography, which we are warranted in deducing from these discoveries and investigations?

As regards the Himyaritic *writing*, the facts we have stated prove with the utmost certainty that in it we have the *origin of*

* The origin of this so-called personal pronoun is as follows. The Shemitish languages have, properly speaking, no reflexive pronouns; but in lieu of them they use such expressions as *my soul, my body, my head, my heart*, &c. meaning *myself*. The phrases *my head, thy head*, &c. for *myself, thyself*, &c. are sometimes employed in Hebrew and Aramaic, but still more frequently in Ethiopic (*Ludolf*, Gramm. pp. 46, 148). In Amharic it is not only the most common expression made use of for this purpose, thus ራሴ *myself*, ራስህ *thyself*, &c. (*Isenberg*, Gram. 47), but this word is also used in a slightly altered form with the suffixes of the third person to make separable pronouns of the third person of both genders and numbers: thus ርሱ *he* (his head), ርሷ *her* (her head), &c. See Rödiger in Allg. Lit.-Zeit. May, 1842. At all events I think this affords a better explanation of the origin of the Saho pronouns, *usuk* he, *ishe* (pron. *is-he*) she, *usun* they, than that suggested by Dr. Ewald in the Zeitschr. f. Kunde des Morgenlandes, vol. v. p. 414.

the modern Ethiopic alphabet. This however is not so much a new discovery as a confirmation of deductions previously made. It had long been the opinion of scholars that the Ethiopic alphabet was formed from the Greek and introduced together with the Christian religion by Frumentius, when in 1819 Gesenius brought forward the suggestion that it was derived from the Phœnician.* This was shortly afterwards fully demonstrated by Kopp, both from the forms of the letters, which have a greater resemblance to the Phœnician than to the Greek; from the position of the ገ, which shows it to have been derived from an alphabet which read from right to left; and also from the names of the letters.† This last argument was carried out more fully by Hupfeld,‡ who showed that the Ethiopic names of the letters have a more primitive character than even the Aramaic or so-called Hebrew names themselves, and that where they differ in form from the latter they agree with them remarkably in meaning. The conclusions to which he came on the whole matter are the following: 1st. that the art of writing was possessed by the Ethiopians in ancient times, to wit, before they acquired a knowledge of the Christian religion; 2dly. that they received it from the Himyarites; and, 3dly. that this writing, of which little use was made except in inscriptions, came to be more commonly employed after the reception of the Christian religion from the Greeks, and was then reduced to the form in which we now have it, that the order of the writing was reversed so as to read from left to right, and the vowel-notes added to complete the system. For the reasons which the author adduces in support of these opinions, the reader is referred to his learned and highly ingenious treatise just quoted. They have

* In two articles on the Ethiopic and Amharic languages in Ersch and Gruber's Encyclopedie. 1819.

† Bilder u. Schriften, vol. 2. §322. 1822.

‡ Exercitationes Æthiopicæ, p. 1 seqq. 1825.

already been adopted by the best judges,* and probably but few will be inclined to dispute their correctness. In fact the second proposition, which implies that the primitive Ethiopic alphabet was brought from Arabia to Abyssinia, is the only one which at present admits of much controversy. The probabilities indeed are all in its favor, and to these is now added the argument derived from the wide extent of country over which we find this alphabet to have been spread in southern Arabia; whence we may safely assume that this system of writing originated in Arabia and not in Abyssinia, until the contrary is proved. Now supposing the Himyaritic to be an immediate descendant of the Phœnician, or, if it be preferred, of the ancient Hebrew, the question arises, How did the Himyarites obtain a knowledge of this alphabet? The reply which naturally suggests itself is, that this was in all probability effected at some distant period by means of the commercial intercourse which was carried on between the Sabeans and the nations of the Levant from the remotest times, both by way of the Red Sea and of the Persian Gulf.† As this latter route appears to have been the oldest, we may reasonably acquiesce in the opinion of De Sacy and Hupfeld, that this was the channel through which the ancient Himyarites were made acquainted with the Phœnician letters. The Himyarites however did not merely copy the Phœnician alphabet. They like the Greeks reduced the whole to a more symmetrical form, and enlarged it by such additional letters as their language required.‡ The principle of giving uniformity to

* See for instance *Gesenius*, Monn. Phœn. § 75. *Rödiger*, Excursus to Wellsted's Reisen, vol. 2. p. 377, and in the Halle Allg. Lit.-Zeitung, May, 1842. No. 91.

† See Heeren's Researches, vol. 2, pp. 106, 107.

‡ Sir William Jones, in his Discourse on the Arabs (delivered Feb. 1787), alludes to an opinion that the Himyaritic writing resembled the Nagari; and Seetzen and Wellsted both thought they perceived in it a similarity to the characters of the inscriptions on the lats of Delhi, copied in the seventh volume of the Asiatic Researches, tab. 7–10. The same resemblance is noted by Dr.

the size and appearance of the letters, was carried still further in the formation of the modern Ethiopic character; witness the inversion of the ח, and the changes in the forms of the letters ח, ו, ה, ל, ע, ר, שׁ. Other alterations, which were effected probably by the Greek monks who introduced Christianity into Abyssinia, consisted in changing the direction of the writing into that to which they were already accustomed; affixing to the letters the vowel-notes, which were absolutely needed for the purpose of representing with exactness the foreign proper names and theological terms then introduced into the language; and adding the Greek numerals. With respect to this last improvement, it is justly observed by Kopp, that the use of the Greek numerals by the Abyssinians no more proves the Greek origin of their alphabet, than do the Indian numerals the Indian origin of the Arabic or even the German alphabet. The principal kinds of writing ancient and modern employed in the Shemitish languages may be comprised under the following general heads:

	Anc.	Mod.
Separate	Phœnician,	Samaritan.
	Persepolitan,	Hebrew.
	Himyaritic,	Ethiopic.
Connected	Estrangelo,	Syriac.
	Kufic,	Naskhi.

With respect to the Himyaritic *language* and the *people* who spoke it, our conclusions must remain less specific. The two topics are so intimately connected, that any new light thrown on one of them can hardly fail to be reflected on the other. The slight acquaintance with the ancient language which we have already obtained by means of the inscriptions, is sufficient to show us that it was a Shemitish dialect ap-

Lepsius in his Zwei Sprachvergleichende Abhandlungen, p. 77. As the inhabitants of southern Arabia have always kept up with the natives of India an intercourse whose origin dates before the dawn of history, it might well be that their mode of writing was influenced in consequence; but I cannot speak from observation, having been unable to procure a sight of the volume in question.

proaching nearer than the northern Arabic to the Hebrew and probably to the Aramaic. Future researches in Arabia and Abyssinia can alone decide this last point, and furnish us with authentic information as to the origin of the Arabian tradition that the language of the Himyarites till the time of Ya'reb was Syriac,* and of the Abyssinian tradition of an ancient character called Syrian, which was known only to their priests and learned men.† That the Abyssinians are actually descended from the ancient inhabitants of southern Arabia, as ancient writers positively testify, cannot well admit of doubt; and this is a principal source of the interest which we are inclined to take in the history of the latter.‡ The reasons adduced by Ludolf in support of this position§ are strengthened rather than invalidated by the recent discoveries. What is the precise nature of the Himyaritic language and what are its relations to the Ethiopic, or in other words, what was the state of the language of the Abyssinians before it was transplanted into Africa, and what are the modifications which it has subsequently undergone, are questions which we do not as yet possess the means of answering, although we are entitled to hope for their solution at no very distant day. When we are once able to answer them, we

* *Sale*, Prelim. Discourse to Koran.

† *Kircher*, Prodromus Coptus, p. 47.

‡ Prof. Rödiger assumes a close degree of connexion between the Himyaritic and Ethiopic, and deduces many words in the inscriptions from the latter language. But that in this he has gone too far, is evident from the fact that all these etymologies are doubtful, and that while some of them may be equally well explained from the Aramaic, others are decidedly erroneous. The probability of such connexion is indeed by no means destroyed; but as far as those words and phrases go whose meaning may be considered as established, there is manifested a greater affinity to the Hebrew than to the Ethiopic (see p. 456 seqq.). That the so-called modern Himyaritic or Ehkili presents striking analogies to the Ethiopic, and even to the modern court-dialect of Abyssinia, the Amharic, is quite clear; but this may be accounted for by the conquest of the Himyaritic kingdom by the Abyssinians, which resulted in the downfall of the former (p. 428), and by the subsequent intercourse of the two peoples.

§ Hist. Æthiop. lib. 1. cap. 1.

can tell with certainty who the Himyarites were, and can also come to some conclusion on those much mooted points, the date of the emigration of the Abyssinians to Africa and the foundation of the ancient kingdom of Axum.

I have now performed the promise given in the outset, to furnish in a connected and compendious form an account of these interesting discoveries and of the results already obtained through the investigations to which they have given rise. In so doing I have taken especial care to cite the original publications in which all further information respecting them is to be sought, in order to facilitate the researches of such as may wish to second the endeavors of Dr. Rödiger, who complains that no scholar has yet applied himself to the deciphering of these monuments with the exception of Gesenius and himself. The grand desideratum at present, however, is an addition to our stock of inscriptions and more accurate copies of those already obtained, especially the great one of Ḥiṣn Ghoráb. Such additions we are happily now about to receive. It appears from the Annual Report of M. Jules Mohl, read before the Asiatic Society of Paris in July last, that in the beginning of the year 1843 there came to M. Fresnel at Jidda a French apothecary of the name of Arnaud, who had for a long time resided in Yemen. He brought with him some notes on the geography of that region; but M. Fresnel told him that what was most desired of all was a collection of Himyaritic inscriptions. M. Arnaud entered upon the undertaking with zeal. He set out, arrived at Ṣan'á; and owing to the friendship entertained for him by the chiefs of the country, he effected what Hulton and Cruttenden were prevented by local jealousy from accomplishing; that is to say, he reached Máreb, the ancient capital of Hadramaut. He there found the remains of the celebrated dam and the ruins of several great monuments called by the natives the Harem and the Columns of Balḳís; but above all he succeeded in copying *sixty Himyaritic inscriptions!* These inscriptions have already

arrived at Paris; and orders have been given by the director of the Imprimerie Royale for cutting a fount of Himyaritic types after a calligraphic model prepared by Messrs. Arnaud and Fresnel, with which it is the intention of the Asiatic Society of Paris to print the new inscriptions in the forthcoming numbers of their Journal. The publication of this rich accession to the previous stock of materials cannot but have a most important effect in furthering the progress of the investigation. There are also other explorers in the field, and some new inscriptions are said to have been sent to England. These researches, it cannot be doubted, will furnish us a greater amount of correct information respecting the language and history of the ancient sons of Himyar than can now be derived from all other sources put together.

It was my intention to add here, by way of Appendix, a review of that portion of Mr. Forster's Geography of Arabia which relates to the Himyaritic inscriptions;* for as the author has little or nothing in common with those whose labors we have been discussing, except what he has borrowed and perverted to his own use, it seemed most advisable to treat his work by itself. The defects of this singular production are so numerous and glaring as to render their exposure by no means difficult; but happily this unpleasant duty I am no longer called upon to perform. It was due to the honor of British scholarship that Mr. Forster's book should be refuted in the country that produced it; and

* The title of the work is, The Historical Geography of Arabia; or the Patriarchal Evidences of Revealed Religion: a Memoir, with illustrative Maps; and an Appendix containing Translations, with an Alphabet and Glossary, of the Hamyaritic Inscriptions recently discovered in Hadramaut. By the Rev. Charles Forster, B. D. 2 vols. London, 1844.

this duty has not been neglected.* A writer in the Dublin University Magazine for December, 1844, undertook to prove that there is not the slightest ground for supposing the modern Arabic poem in Schultens to be a translation of the ten-line inscription; that even admitting it to be the case, still Mr. Forster's resolution of it into words and the alphabet by which he pretends to read them cannot be sustained; and moreover, that he has falsified in various ways the text accompanying this poem and which describes the manner of finding it and the place where found. The arguments brought forward in support of these propositions are clear, cogent, and unanswerable; the able writer as far as he goes leaves nothing to be desired. Another excellent paper on the same subject was inserted in the English Review for March, 1845. In it the writer confirms all that was advanced by his predecessor, and shows also that the same false reasonings from incorrect premises pervade the whole of Mr. Forster's book. And now, while these sheets are going through the press, the Bibliotheca Sacra for May, 1845, has just appeared, containing an article by Prof. Salisbury of New Haven, of the same tenor as those above mentioned, and which exposes at greater length the fallacy of Mr. Forster's system of turning the inscriptions into Arabic.

I therefore gladly cancel what I had written on the subject, although it is not yet exhausted. This I do simply to avoid an unnecessary repetition of what has already been done so thoroughly and well, and not because I entertain one particle of sympathy for Mr. Forster; since his wholly false and inconclusive method of deciphering the inscriptions, the bombastic strain

* It may be worth while to mention that an article in the Quarterly Review, No. CXLVIII., 1844, reëchoes Mr. Forster's statements and advocates their entire correctness. Mr. Forster repeatedly affirms that Rödiger at first gave to the initial word of the ten-line inscription the meaning "we dwelt," but afterwards abandoned it. Will it be believed that this assertion, although confidently reiterated by the reviewer, is without a shadow of truth!

in which he dilates on his achievements, and above all the disingenuous artifices by which he seeks to disguise the hollowness of his pretensions, render his performance deserving of all the ridicule and censure it has met with at the hands of those who are qualified to pronounce an opinion upon it. The time is now past when the fantastic tricks of a Betham or a Forster could be received with applause or even toleration; philology is every day becoming more and more an exact science, and those who will not take the pains to make themselves acquainted with its progress would do well to refrain from parading before the public their crude theories, which can neither advance the cause of sound learning nor add to their own reputation.

ARTICLE V.

ACCOUNT OF

THE PUNICO-LIBYAN MONUMENT AT DUGGA,

AND THE

REMAINS OF AN ANCIENT STRUCTURE AT BLESS,

NEAR THE SITE OF ANCIENT CARTHAGE.

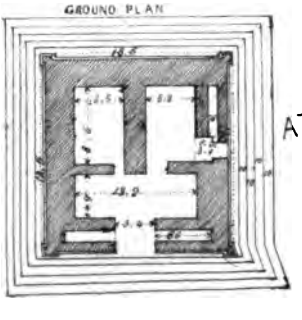
BY FREDERIC CATHERWOOD.

PLATE IX.

LITH. OF G. & W. ENDICOTT

83 JOHN ST. NEW YORK

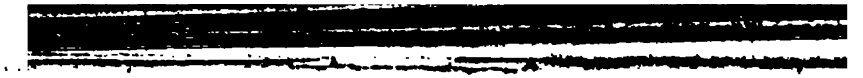
GROUND PLAN



MONUMENT AT DUGGA

PLATE X.

Inscription on Mausoleum at Dugga.



PUNICO-LIBYAN MONUMENT

AT DUGGA.

The building delineated in the accompanying drawing is situated in the Beylic of Tunis, at a place called Dugga. It is the same as the ancient Tucca or Thugga, which was a city of Numidia, near the river Bagrada. The modern name is merely a softening of its original by the native population. It is about 85 geographical miles, or two days' journey, to the west of south from the site of ancient Carthage. The surrounding country is rich, and abounds in cornfields and olive plantations. The remains of former edifices are so numerous in the adjacent country, and the natural advantages so great, that it was doubtless settled at a very early period and sustained a large population.

This building was met with after having explored a large portion of the Beylic of Tunis, which is very rich in the remains of ancient cities. These, however, are all of Roman workmanship, as well as the magnificent aqueduct which formerly supplied Carthage with water; and the inscriptions upon them, which are not only numerous, but of considerable length, are invariably in Latin. The only exception to be met with, is the edifice now under notice. It presents a type of architecture totally different from all others in the country, and is of much greater simplicity and elegance of form. It consists

of a square plinth, twenty feet on each side, raised on four steps, each one foot four inches high, which go entirely round the building. The lower story is fifteen feet high, the angles ornamented with slightly projecting pilasters, with volute capitals and a simple and handsome architrave cornice. From this rise three steps, the upper one supporting a room fifteen feet square, ornamented on its four sides with Ionic columns with capitals and base. The crowning cornice is evidently Egyptian, of grand and massive proportions. At the angles on the top still remain four large stones, pointing inwards towards a centre; and portions of three steps on each side between the angle stones, still remain. The upper part, which probably had its appropriate ornament, is entirely destroyed. At the base of the monument I dug up a sculptured stone about six feet long, representing a charioteer driving four horses at full speed.

The lower portion of this edifice is divided into three rooms (as shown by the plan), with a doorway facing east, three feet four inches wide. The eastern room is thirteen feet two inches long, by four feet nine inches broad, and four feet six inches high. Each of the other rooms is eight feet by five feet six inches, and four feet six inches high. On each side of the eastern doorway are recesses in the thickness of the wall, one foot three inches wide and six feet deep, and consequently large enough for places of sepulture exclusive of coffins. A layer of stones nine inches thick covers these three lower rooms; and above are three others, five feet six inches high, of similar size and distribution to those beneath, with a doorway facing north, one foot nine inches wide. The walls of this portion of the building are three feet one inch thick.

The upper story is divided into two apartments, each seven feet seven inches long by three feet three and a half inches wide, and six feet nine inches high, with a doorway facing east, one foot seven inches wide. The walls are three

feet thick, with grooves for stone sliding-doors. The total height of the building is thirty-six feet. On the eastern front, and to the right of the doorway, are the accompanying inscriptions; one in Phœnician or Punic, the other in Libyan characters.

I should before have stated that this building occupies a prominent place, on an elevation commanding an extensive view to the south. On the three other sides the view is bounded by hills at a short distance.

Among the numerous remains of ancient times found at Dugga are a emple to Jupiter of the time of Trajan, a triumphal arch, and twelve cisterns.

Shaw, in his Travels in the Levant and Barbary, although he mentions Dugga, and gives copies of Latin inscriptions found there, makes no mention of this monument, which is decidedly the most remarkable in the place. Had he visited Dugga, this edifice could not possibly have escaped the attention of so learned and accurate an explorer. The inscriptions given by him were probably copied by some one sent for the purpose, and are now in about the same state of preservation as when copied for him a century ago. I had some reason therefore for supposing myself the first discoverer of this interesting monument, my visit being prior to that of Sir Grenville Temple, who has published an account of this place. I find, however, that Dugga was visited in 1631, more than two hundred years ago, when the Phœnician inscription alluded to in this paper, was first brought to light. A French traveller of the name of D'Arcos, who is allowed by Gesenius to have been a man of learning, embraced the Mohammedan religion in the kingdom of Tunis, and travelled extensively in those parts. He copied the inscriptions referred to and corresponded on the subject with the learned Isaac Peiresc, and furnished him with a copy, which not being a satisfactory one, he offered to send the stone itself; but Peiresc, with a good taste and feeling that scarcely exists at the pres-

ent day, refused the offre, from an unwillingness to cause the ruin of an ancient monument which had survived so many ages. The copy of this inscription sent by D'Arcos was never published to the world, and its existence seems to have been forgotten.

Nearly two hundred years afterwards another copy was obtained by Count Camillus Borgia, a diligent investigator of Tunisian antiquities, and by him communicated to Bishop Münter, who published a specimen of it in his work on the Carthaginian religion. It was soon after published entire by Humbert, and afterwards by Hamaker, who was the first to attempt an explanation of it. An amended copy was afterwards made by Humbert in order to overcome some difficulties in the way of its explanation. The several copies were made from that of Count Borgia, and not from the monument. In 1833, Sir Grenville Temple made a copy from the stone itself, which shows that the previous ones, then known, were in many respects imperfect.

Sir Grenville suggests that perhaps the inscription was placed on the monument not for the person or family for whom it was built, but at a later period. His reasons for coming to this conclusion are not stated. The only apparent reason to me for such an opinion is, that the inscription is not in the centre of the front, so as to be architecturally symmetrical, as is the case in most of the Roman and Greek inscriptions. It is however in a very conspicuous place, on the right hand side of the lower doorway, and no other inscription has been graven on the monument; although, from the position and size of the sixteen large stones forming part of the base of the monument, they would seem to have been placed there for that purpose. The building, with its eight various rooms, is large enough to have contained many bodies, if they were not enclosed in stone coffins, of which no remains appear, nor niches for funeral urns, which are common in the adjacent tombs of the Romans, with the names of the deceased in legible characters inscribed over them.

It must be admitted, however, that the size and arrangement of the interior is not well adapted as a place of deposit for the dead, as in the six lower apartments the width is either 4 feet 9 inches or 5 feet 6 inches, and the length either 13 or 8 feet. The two upper rooms, indeed, might have suited for the heroes or giants of the family, being 7 feet 7 inches in length by 3 feet 3 inches in width, though the doorway is somewhat narrow, being only 19 inches wide, and placed at the height of 20 feet from the ground, without any staircase. The occupants must have been either giants or dwarfs, or a great deal of room has been wasted if intended for people of ordinary stature. It seems scarcely possible, however, setting aside the inscription, that the building could have been intended for any other purpose than that of a place of deposit for the dead, the lowness of the rooms (4 feet 6 inches and 5 feet 6 inches) being against this supposition.

It may not be amiss to observe that the masonry, cutting, and laying of the blocks of stone is of the very best workmanship. I had no opportunity of ascertaining positively whether the cramps were of bronze, iron, or wood; but think it not unlikely, from certain marks on the stones, that the latter material was employed; and as the olive-tree abounds in this vicinity, it may have been used for that purpose, as was the case in the construction of the Parthenon at Athens.

Having now given the architectural details of this beautiful edifice, the only one of apparently high antiquity I met with in this region of country, excepting some very primitive, massive, and cyclopean structures, an account of which I purpose laying before the Society on some future occasion, I will now call your attention to the inscriptions before alluded to, sculptured on this monument.

The first attempt at deciphering this inscription was published in 1822, by Prof. Hamaker of Leyden, in his Diatribe de aliquot Monumentis Punicis. He transcribed the Punic portion in Hebrew characters and gave a Latin translation of

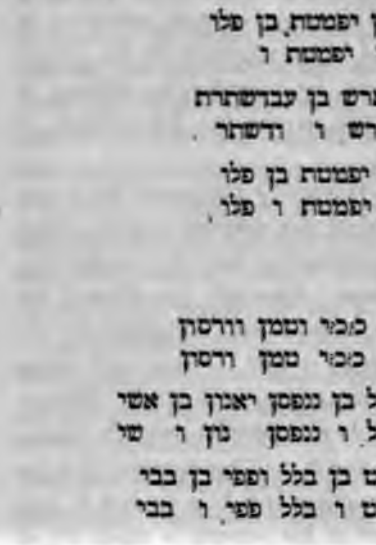
it; but being based on Count Borgia's copy, which was imperfect, his version naturally proved very unsatisfactory even to himself. Indeed, with the exception of the words מצבת and בן, he does not seem to have read a single word correctly. Although he did not propose a translation of the Libyan part, he hit upon the right track for deciphering it, by observing that it must evidently read from right to left like the Punic; because here also the fourth line stops in the middle, leaving the left half of the line blank. And as this line contains in both inscriptions about the same number of letters, and as in both the Punic and Libyan the fourth and fifth lines end with the same group of characters, he concluded that the contents of both were the same.

The investigation was resumed by Gesenius, and the results at which he arrived are embodied in his well-known work the Monumenta Phœnicia, pub. 1837. The new copy of the inscription furnished by Sir G. Temple was far more accurate than that of Borgia, and contained most of the points used to separate the words, which Borgia had overlooked. Gesenius first presented Hamaker's version of the Punic, and showed at length its incorrectness. He then formed a new text by a critical collation of the different copies (inserted in Pl. 20), and to this he added a new translation and a very learned commentary on each word of the inscription, where the reasons for his rendering are given at length. He then applied himself to the other portion of the inscription, for the interpretation of which so little had been accomplished, that the learned had not even decided the name of the characters. Hamaker had styled them Celtiberic; but Münter and Quatremère had, as Gesenius remarks, more correctly termed them Libyan. By following up the hints of Hamaker, and adopting the system made use of by Dr. Young and De Sacy in interpreting the Rosetta stone, Gesenius was able to identify several proper names corresponding to those in the Punic portion, and also the word or sign for *son*. But when Gesenius's work was

nearly all in type, he received from London a still more exact and elegant copy of the inscription, which had been taken by M. Honegger, a companion of Sir Thomas Reade in his travels in the Barbary states. This copy Gesenius published in an additional plate (46); and in an appendix to his former article in the body of the work, he amended his reading in several places, and particularly in the last line, which he changed altogether.

A careful examination of Gesenius's version, of the means by which he arrived at it, and of the different copies of the inscription, shows that, notwithstanding these repeated labors, much still remained to be done. Gesenius has divided the words in several places in a manner not warranted by the copies of Temple and Honegger, so that the very same group of letters is explained in different places in a totally different manner; he has also adopted here a peculiar rule for distinguishing the similar letters ב and ם, and has assumed that the character which in other inscriptions is a ב is here a ם, and vice versa; and lastly, a part of his version is made up of high-sounding phrases, which it is not likely would be contained in an ancient sepulchral inscription like the present, where we are accustomed to meet with little besides names and dates. Moved by these considerations, M. Fr. De Saulcy undertook to study the inscription anew, and his views have been communicated to the public in the Journal Asiatique for February, 1843. By rejecting Gesenius's hypothesis with regard to the peculiar powers of certain letters in this inscription, by adhering more closely to the excellent copy of Honegger, and by more accurately comparing the Punic and Libyan texts, he has succeeded in constructing a version which is far simpler and evidently much more correct, while he has recovered the true powers of many of the Libyan characters which before had been read either erroneously or not at all. By placing the fragments of the Libyan beneath hose parts of the Punic text to which they correspond, in the

manner of an interlinear version, he has made them admirably illustrate and confirm one another. He reads and translates as follows.



1. Tomb of Ataban, son of Jophmathat, son of Faloo.
2. The builders who have erected it are: Abaras, son of Abdastaret;
3. Comer, son of Ataban, son of Jophmathat, son of Faloo;
4. Menegi, son of Oorasoon.
5. .... Kaki(?), and Taman, and Oorasoon;
6. ..... Mesedil, son of Nenifsen, and Anoon, son of Asi;
7. .... Sufet, son of Belal, and Fafi, son of Babi.

The copy of the inscription taken by myself and given in Pl. X. agrees very closely with that of Honegger, except that I have accidentally omitted the נ of the word מאבנם in the second line. The whole of the fourth line of the Punic is wanting in my manuscript copy, and it will be observed that in my drawing of the tomb the space which it should occupy is left blank. This omission, for which I do not know how to account, I have supplied in the plate by inserting the line from

Honegger. The rest of the inscription is given as taken by me on the spot. It confirms the readings adopted by De Saulcy in several places where the other copies differ among themselves.

M. De Saulcy vouches for the correctness of his mode of deciphering the inscription, except as regards the assumed letter כ. He also interprets with certainty the proper names and the word *son*, where the Punic and Libyan coincide. The first line, the first word of which had been made out before, he observes must form a sort of heading or title, as it is placed twice as far from the second line as the rest are from each other. For the two first words of the second line he offers merely as a suggestion the translation given above. The other phrases at the beginning of the three last lines, which evidently do not consist of proper names, since here the Punic and Libyan differ decidedly, he does not venture to translate.

The Libyan part of the inscription, imperfect as it is, is by far the more curious and interesting of the two, as it opens the way to the knowledge of an ancient alphabet and language hitherto unknown. A good portion of the alphabet is here made out with certainty, although some of the letters in this and other inscriptions in the same character still remain unknown. M. De Saulcy points out a simple and curious orthographical precaution observed in it. The letter ג consists of one, and the letter ל of two perpendicular strokes; whenever two ג's, two ל's, or a ל and a ג concur, a marked inclination is given to the latter of the two characters, so as to prevent their being confounded together. The words are all separated from each other by a point, except ו *son of*, which is prefixed to the name that follows it. Some of the proper names are shorter than in the Punic, in consequence of cutting off the initial vowel א. That *Οὐδόστωρ* (עזשחר) was equivalent to Abdastarte is shown by Gesenius himself in his Monumenta, p. 403. There is nothing to represent

the conjunction *and*. Although M. De Saulcy could not interpret the phrases at the beginning of the sixth and seventh lines, he observes that in the Punic the first word of each line appears to begin with the article ה, and that the second word of the seventh line begins with ש, which probably denotes the genitive. It has since been remarked by M. Judas (Journ. Asiat. April, 1844), that the second word in each of these lines begins in the Libyan with the letter ɔ, and ends with an unknown character consisting of three horizontal lines; he hence concludes that they are grammatical signs of inflexion, and compares the Egyptian plurals in the hieroglyphic and demotic texts.

As the work of Gesenius is exclusively philological, it is to be regretted, that no historical elucidation of the inscription or its probable date is comprised in it. It would therefore be bold in me to attempt to fix the date of the inscription, when so distinguished a scholar has passed it by in silence;—still, in speaking of the monument in an architectural point of view, it may not be amiss to hazard some conjectures as to the period of its erection.

That which most forcibly struck me as an architect was the beauty and harmony of proportion, which characterize this building; and a singular architectural anomaly, namely, a blending of Greek and Egyptian art. The four lower pilastres at the angles and the architrave cornice above, are of the most ancient Greek form, taste and workmanship. So, likewise, the eight Ionic columns, bases and capitals, are of the earliest and most primitive state of art in Greece, nor do I remember any building in that country or its dependencies, of a more severe and rigid style. The architrave and cornice are purely Egyptian, and are not to be for a moment mistaken. If this building was once stuccoed and painted (as was probably the case) all traces have disappeared, which is easily accounted for by its situation on the brink of a high hill, and its exposure for unknown centuries to rain and

sometimes frost. I think it will be conceded from the architectural features of the building that it is of high antiquity and erected not very long after the settling of the country by the Phœnicians, that it was when Greek art first began to dawn. At any rate, all would fix its erection nearer the foundation of Carthage about 900 years before Christ, than the decline and fall of that kingdom in the third century B. C. The employment of the Libyan characters and language in the inscription, also strengthens my opinion, for we cannot sup pose that the language of a subjugated people would be long preserved, and placed side by side with the Phœnician on the most beautiful monuments, when the Carthaginian people had reached their greatest power. It is distinctly stated by Polybius, in speaking of the Carthaginians, that the Libyans employed in their armies were "subjects," while the other African nations employed were the nomade tribes which were never subjected, and ranked in the armies as mercenaries or employed soldiers. Hence no pains would be taken to preserve their language.

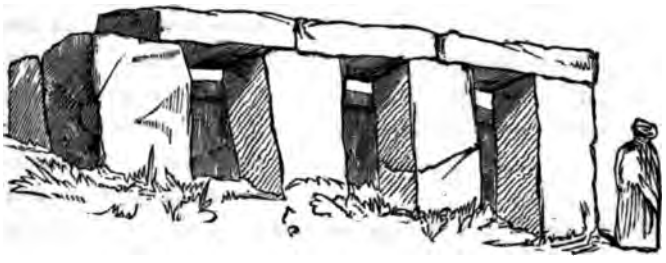
In speaking of the Greek style of architecture which appertains to this building, it will be said that no very great intercourse existed between Greece and Carthage, which were rivals in commercial enterprises; but they must have met on the neutral ground of Sicily, so often the battle-ground of the Greek, Carthaginian and Roman armies, where I have examined some of the most ancient specimens of Grecian art; all, however, of the Doric, and, so far as my memory goes, no one of the Ionic order. We should naturally look for the earliest specimens of Carthaginian or Phœnician buildings, as bearing a distinctive stamp and having relation either to Jewish architecture, as in Solomon's Temple, or else to the Egyptian. I believe that hitherto, it has not been ascertained whether the Jews had any national style of building, at least I am not aware of any remains undoubtedly Jewish, of early date, except some huge walls and stones. It is most

probable that the Jews as well as the Phœnicians, copied the Egyptian with such modifications as difference of climate required, and gradually towards the North of Syria in more modern times, the Greek and Egyptian styles were blended, as exhibited in the monument at Dugga. It is singular that in the wide extent of the Carthaginian territories, and among the almost innumerable remains of Temples, Tombs, Theatres, Amphitheatres, &c., still existing, this is, comparatively speaking, the only ancient building known. All the others, and truly magnificent they are, show marks of the bad taste, which resulted from the decline of Roman architecture, which is as widely extended as the Roman conquests, and found alike in Britain, Spain, France, Africa, Italy (exclusive of Sicily), Syria, Turkey, and even in Egypt. Egyptian architecture was confined to the country that gave it birth, whereas the Greek and Roman have pervaded the world, and superseded all others.

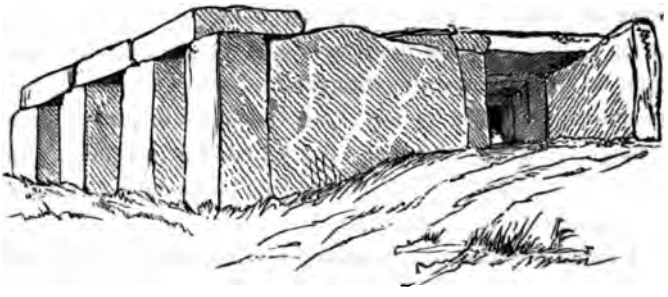
Such are the facts which I have been able to gather in relation to the ancient monument and inscription at Dugga, and I only regret that the great deficiency of authentic history relative to the Carthaginians does not permit a farther elucidation of the subject. No full history, such as we possess of Greece and Rome, has come down to us, and the little the world knows of one of the most celebrated kingdoms of antiquity, founded nearly 900 years before our era, and the power of which was at its greatest height 500 years B. C., has been derived from the Greek and Roman historians, who speak of Carthage only in connexion with their own history. Even Herodotus, who lived when the Carthaginian kingdom was in its most flourishing state, says little on the subject, although the other great nations of his time, some of which were intimately connected with Carthage, attracted his particular attention.

REMAINS OF AN ANCIENT STRUCTURE AT BLESS, IN THE SOUTHERN PART OF THE REGENCY OF TUNIS.

(VISITED IN MAY, 1832.)

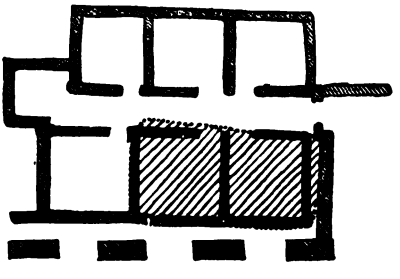


VIEW OF THE FRONT.



VIEW OF THE SIDE AND ENTRANCE.

The structure above delineated strongly arrested my attention, from its contrast with the Roman remains by which it is surrounded. It bears the stamp of the highest antiquity, and the simplicity of its arrangement may be judged of from the plan annexed. It is composed of calcareous stones placed upright, and covered with large slabs, one measuring 19 feet 3 inches by 11 feet 5, and 1 foot 8 inches thick. The hatched line



FRONT ELEVATION.

SECTION.

within the dotted line shows the form and position of this stone. Neither cramps nor mortar have been used in the construction. The only entrance is on the side, by a doorway 2 feet 10 inches wide; this leads to a passage 4 feet wide, 6 feet 5 inches high, and 30 feet long, having at the end a recess 5 feet × 4. On each side of the passage are rooms, three on the left and three on the right; these rooms are about 8 feet by 7, and 5 feet 10 inches high, having each a separate doorway 2 feet 4 inches wide. The rooms do not communicate with each other. There is neither inscription nor mark of any kind to guide the traveller in forming even a conjecture as to the period of its erection; and this is the case with several monuments of a similar character in its immediate neighborhood.

I found this structure inhabited by two Arab families, and the tradition is that it has always been so from the remotest times. It has in no respect the appearance of a tomb, and probably the use now made of it is that for which it was originally intended. To my mind it bore the impress of such high antiquity, that I considered it one of the first buildings erected in the country, going back perhaps much further in date, and certainly older in design and workmanship, than the Phœnician monument at Dugga before described. It is not unreasonable to suppose that this house may have had an uninterrupted succession of inhabitants for upwards of three thousand years, and yet the building seems scarcely touched by the hand of time. The surrounding country is fertile and healthy, and elevated so much above the sea as

to enjoy a cool climate when compared with the scorched desert at no very great distance southward. I omitted taking the bearings of the compass, and therefore cannot tell which way it faces.

New-York, April, 1845.

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Crestomathie Chinoise, published by the Asiatic Society of Paris, 4to. $5. 1833.

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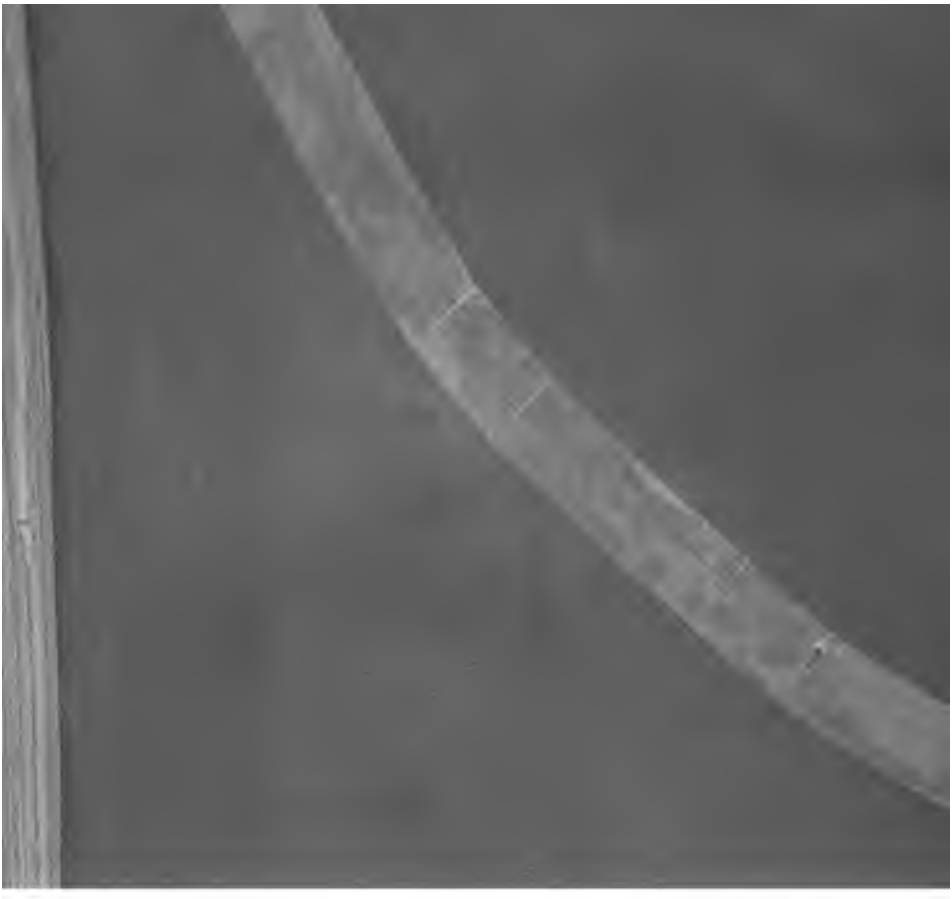
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